F.T.C. NORVA

FLEET TRAINING CENTER

(2)

COURSE CURRICULUM DOCUMENTATION

Sample Format For :

- COURSE MISSION
- POA & M
- TASK INVENTORY
- INSTRUCTIONAL SETTING
- LEARNING OBJECTIVES
- TESTS
- CURRICULUM OUTLINE
- CORRESPONDENCE
- INSTRUCTOR GUIDES
- STUDENT GUIDES
- TRAINING AIDS
- VALIDATION

FLETRACEN NORVA INST. 1550.2D

ENCLOSURE (2)

DEPARTMENT OF THE NAVY
FLEET TRAINING CENTER
NORFOLK VIRGINIA 23511

FLETRACEN NORVA INST 1550.2D
8184-85-86P7
Code N373
13 APR 1977

FLETRACEN NORVA INSTRUCTION 1550.2D

Subj: Course Curriculum Documents; sample format for

Ref: (a) CNTT-A10
(b) CNET INST 1560.2B
(c) COMTRALANT INST 1550.1K
(d) NAVEDTRA 106A
(e) MIL-STD-1379A (Navy)
(f) CNET INST 1500.12 (Chg 1)

Encl: (1) Course Curriculum Documents; sample format for

1. Purpose. To establish a standard format style for thirteen documents resulting from curriculum development or major revision. These documents are:

a. Course Mission

b. Plan of Action and Milestones (POA&M)

c. Task Inventory

d. Training Setting and Delivery System

e. Objectives

f. Tests

g. Curriculum Outline

h. Cover Letter to Participating Schools with Curriculum Outline

i. Cover Letter to Course Curriculum Authority (CCA)

j. Instructor's Guide (IG)

k. Student's Guide

l. Training Aids Request

m. Validation

2. Cancellation. FLETRACEN NORVA INST 1550.2C.

3. Background. References (a) through (f) provide general guidelines for the proper formatting of course curriculum documents. However, no where in these publications is there an actual sample provided to display application of the guidelines. This deficiency has caused considerable consternation among those Fleet Training Center personnel who are charged with the development of course materials. Numerous format questions relative to what is "right and proper" are frequently raised; these questions may be occasionally answered differently by different FLETRACEN resource personnel. Such decisions on formatting often become "a matter of opinion," resulting in still further confusion. Reference (d) provides guidance for curriculum development for all services and employs the Instructional Systems Development (ISD) approach.

4. Discussion.

a. A large number of task analyses are available in the form of Personnel Qualification Standards (PQS), Maintenance Requirements Cards (MRC) and Navy Occupational Task Analysis Program (NOTAP). This instruction provides a procedure for selecting tasks from these sources and using them as a base for course development or revision.

b. Enclosure (1) has been prepared by FLETRACEN's Curriculum Instructional Standards Office (CISO) personnel based on a modified version of an actual course taught at the Fleet Training Center, Norfolk. References (a) through (f) form the basis for its format development, with local modification and adaptation occurring where appropriate to meet recognized FLETRACEN needs. These changes in no way contradict or contravene the design and intent of the references. Explanations of traditionally misunderstood aspects of format and design are included on facing pages at the appropriate points in the curriculum documents through the use of the "Professor Ed Spec Comments" commentaries. Prior to promulgation of this instruction, the contents of enclosure (1) were reviewed by the education technologists in the Fleet Training Center. Their constructive comments have been considered and incorporated in the samples when appropriate.

5. Action

a. The concepts and procedures set forth and exemplified in enclosure (1) are effective for the standard preparation of curriculum documents began subsequent to the promulgation date of this instruction.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER: FLETRACEN-NORVA-INST-1550.2D	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)*: COURSE CURRICULUM DOCUMENTATION; Sample Format for,		5. TYPE OF REPORT & PERIOD COVERED: Final Report, April 1977 Indefinite
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9. PERFORMING ORGANIZATION NAME AND ADDRESS: Fleet Training Center, Codes N373/N372, U.S. Naval Station, Norfolk, Virginia 23511		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
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16. DISTRIBUTION STATEMENT *(of this Report)*

Approved for public release; distribution is unlimited.

17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*

18. SUPPLEMENTARY NOTES

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

Instructional Systems Development		Curriculum
Systems Approach	Instructional Setting	Curriculum Outline
Systems Analysis	Objectives	Instructor Guide
Task Analysis	Learning Objectives	Student Guide
Task Inventory	Tests	Validation

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

This instruction is essentially a manual which provides detailed guidance for developing curriculums using the systems approach to training. Sample formats are provided for the following documents: course mission, plan of action and milestones, task inventory, instructional setting, learning objectives, tests, curriculum outline, correspondence, instructor guides, student guides, training aids and validation. Explanations of traditionally misunderstood aspects of format and design are included at appropriate points in the curriculum documents through the use of "Professor Ed Specs Comments."

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ENCLOSURE (1)

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

This manual was written to provide actual sample applications of course curriculum development guidelines provided by other documents, namely, NAVEDTRA 106A, "Interservice Procedures for Instructional Systems Development" and MIL-STD-1379A (NAVY), "Military Standard Contract Training Programs."

Although written primarily for a Navy training command, the material is also applicable to the other military services and the academic community.

b. Individuals assigned review responsibilities of curriculum materials will ensure compliance with paragraph a above.

c. The FLETRACEN Word Processing Center is instructed not to prepare any curriculum document which violates the format principles of enclosure (1). Requests for purposeful deviations from the format established herein will be referred to the Curriculum Instructional Standards Office (CISO).

ROBERT L. THOMAS

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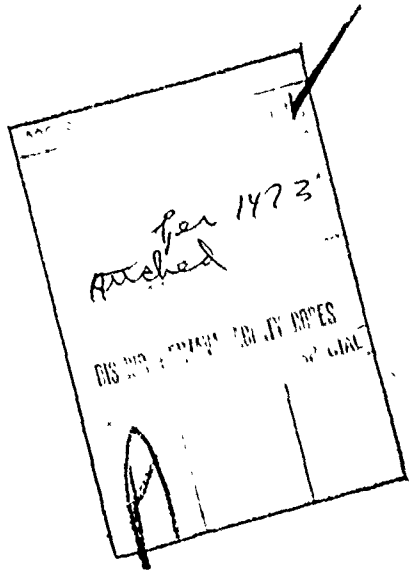


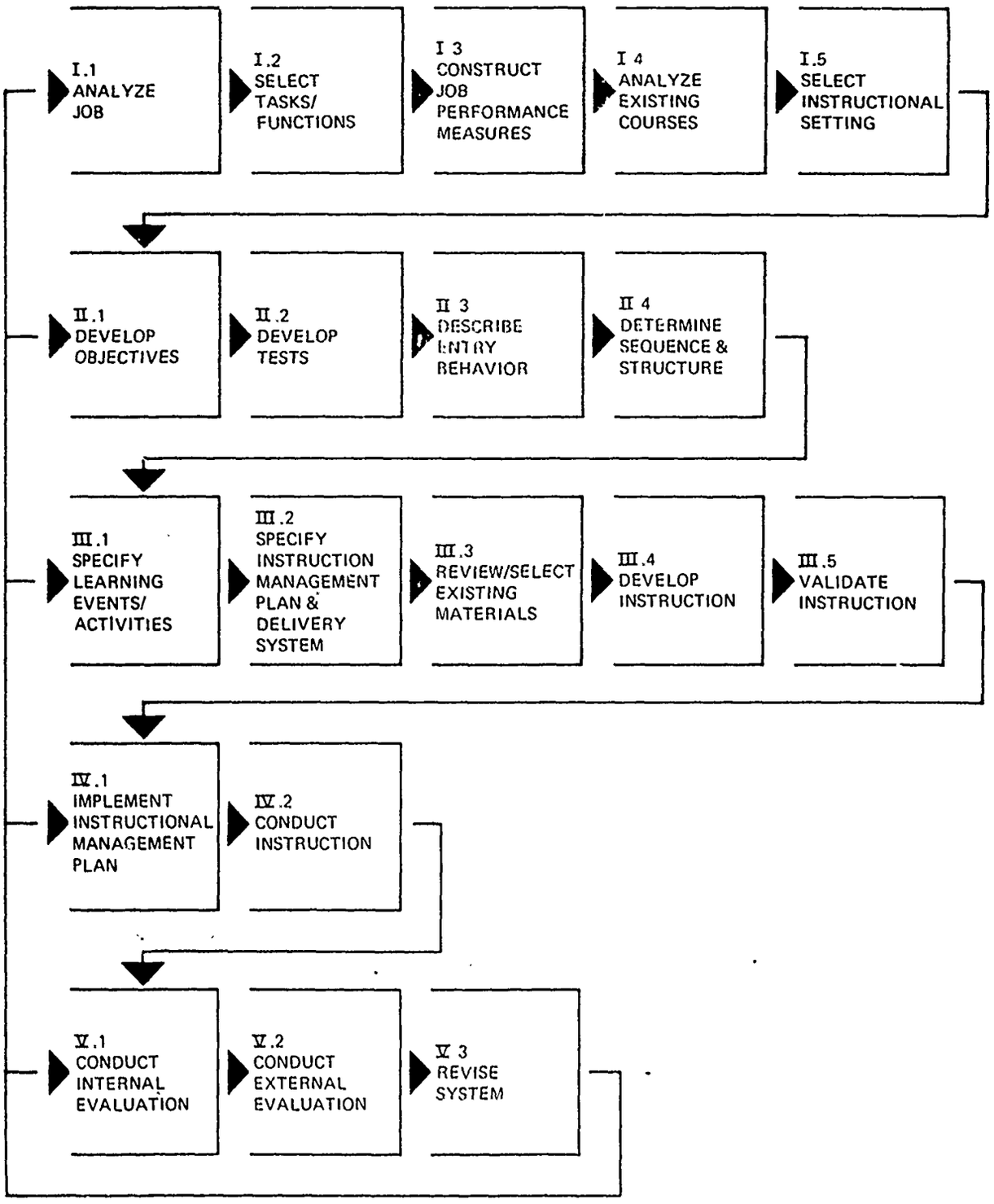
TABLE OF CONTENTS OF SAMPLE CURRICULUM DOCUMENTS

PROFESSOR ED SPECS COMMENTS:

The ISD flowchart on the facing page is the interservice (Army, Navy, Marine Corps and Air Force) model for instructional systems development. The samples and comments on the following pages are a Navy school application of this model.

INTRODUCTION
FLOWCHARTS AND OVERVIEW

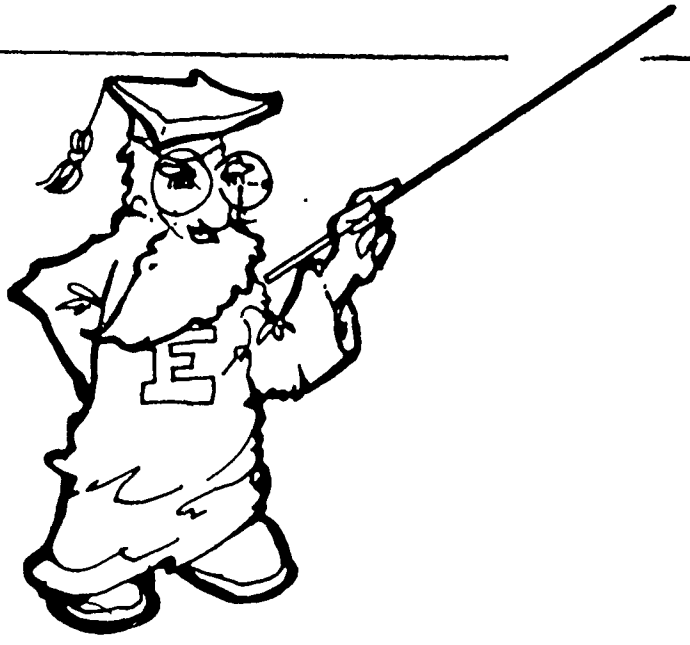
THE BLOCKS IN EACH PHASE ARE:

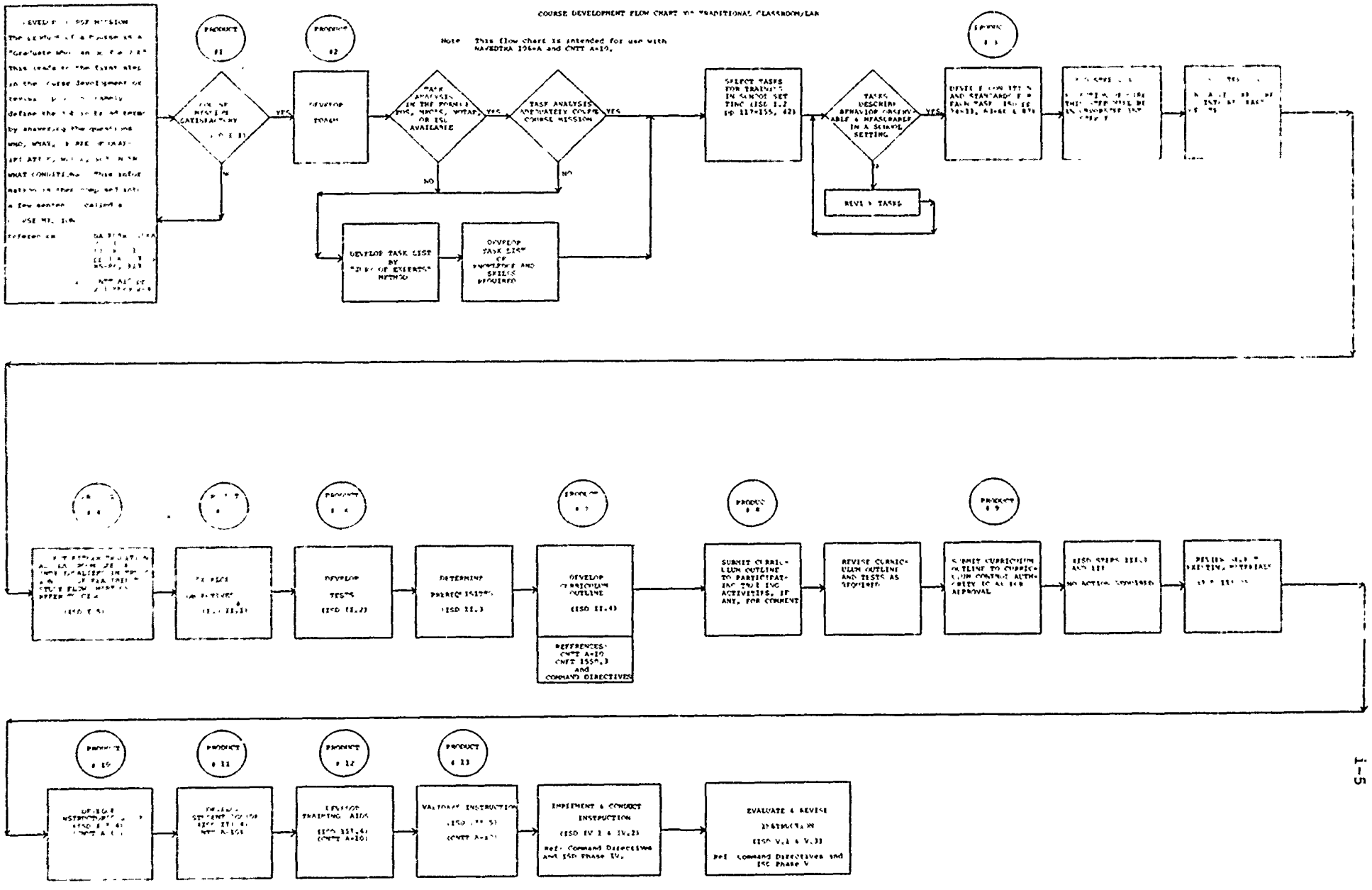


INSTRUCTIONAL SYSTEMS DEVELOPMENT (ISD) MODEL

PROFESSOR ED SPECS COMMENTS:

The facing course development flow chart includes the essential elements from both CNTT-A10 and NAVEDTRA 106A. It is to be used as a roadmap going from "DEVELOP COURSE MISSION" to "VALIDATE INSTRUCTION". The diamond shaped blocks are decision blocks. If the answer to the question in the decision block is yes, you go that way, if the answer is no, you follow the "no" arrows. When the thirteen products (indicated in circles over the appropriate blocks) are complete, you are done with your course development or revision project. The remainder of this publication contains samples of these thirteen products.




COURSE DEVELOPMENT FLOW CHART VIA TRADITIONAL CLASSROOM/LAB
Note: This flow chart is intended for use with NAVEDTRA 1964A and CNTT A-19.
PRODUCT #1
PRODUCT #2
YES
NO
DEVELOP TASK LIST BY "DAY OF EVENTS" METHOD
DEVELOP TASK LIST OF KNOWLEDGE AND SKILLS REQUIRED
SELECT TASKS FOR TRAINEE IN SCHOOL SETTING (ISD II:2 to II:3 pp 117-155, 423)
TASKS DESCRIBED BEHAVIOR (OBSERVABLE & MEASURABLE) IN A SCHOOL SETTING
REVISE TASKS
PRODUCT #3
PRODUCT #4
PRODUCT #5
PRODUCT #6
PRODUCT #7
PRODUCT #8
PRODUCT #9
DEVELOP TESTS (ISD II:4)
DETERMINE PREREQUISITES (ISD II:3)
DEVELOP CURRICULUM OUTLINE (ISD II:4)
REFERENCES: CNTT A-19 CNTT 1550.3 and COMMAND DIRECTIVES
SUBMIT CURRICULUM OUTLINE TO PARTICIPATING FIELD ACTIVITIES, IF ANY, FOR COMMENT
REVISE CURRICULUM OUTLINE AND TESTS AS APPROVED
SUBMIT CURRICULUM OUTLINE TO CURRICULUM CONTROL AUTHORITY FOR ACTION/APPROVAL
(ISD STEPS III:3 AND III)
NO ACTION SUSPENSED
PRODUCT #10
PRODUCT #11
PRODUCT #12
PRODUCT #13
DEVELOP TRAINING AIDS (ISD III:6) (CNTT A-20)
VALIDATE INSTRUCTION (ISD IV:5) (CNTT A-21)
IMPLEMENT & CONDUCT INSTRUCTION (ISD IV:1 & IV:2)
Ref: Command Directives and ISD Phase IV.
EVALUATE & REVISE INSTRUCTION (ISD V:1 & V:3)
Ref: Command Directives and ISD Phase V

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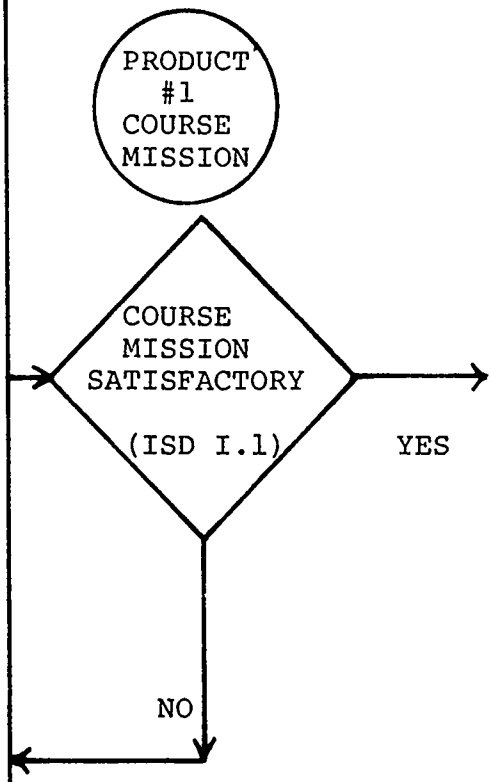
DEVELOP COURSE MISSION

The product of a course is a "Graduate Who Can Do the Job". This leads to the first step in the course development or revision process, namely, define the job in broad terms by answering the questions: WHO, WHAT, DEGREE OF QUALIFICATION, WHERE and UNDER WHAT CONDITIONS. This information is then composed into a few sentences called a COURSE MISSION.

References: (1) NAVEDTRA 106A
Vol. 1,
Block I.1
pp. 1-6, 33-35
85-86, 113

(2) CNTT-A-10 pp
2-1 thru 2-3



SAMPLE COURSE MISSION *

*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

PROFESSOR ED SPECS COMMENTS:

The following checklist may be used to determine if a course mission is satisfactory. The portions of the course mission fulfilling the checkoff item is included in parenthesis.

COURSE MISSION (PRODUCT #1)

(yes) 1. States WHO is going to be trained. (ET, RM, CT strikers and above)

(yes) 2. States WHAT the graduate will be able to do. (establish and operate six on-line communication systems; the Bravo, Charlie....includes configuring and operating the KW37...and associated ancillary equipments)

(yes) 3. States DEGREE OF QUALIFICATION. (without supervision)

(yes) 4. States WHERE the students will be using their learned skills. (shipboard)

(yes) 5. States UNDER WHAT CONDITIONS the student will be able to perform. (under all shipboard conditions of readiness)

(yes) 6. Presents a smooth flow of ideas.

(yes) 7. Grammatically correct.

(yes) 8. Spelling correct.

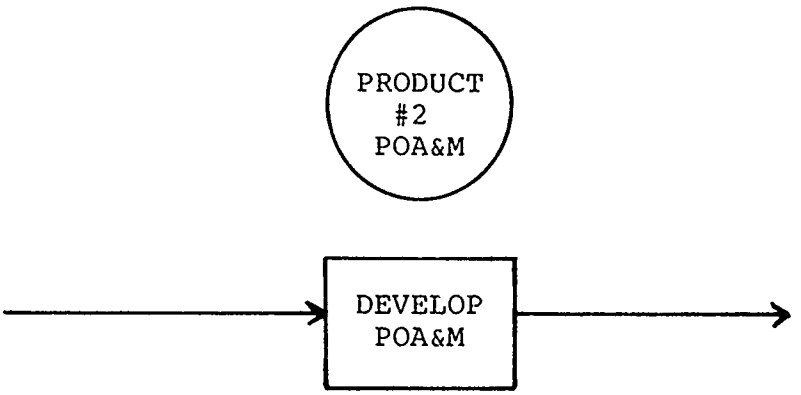
(yes) 9. Approved by CISO and school directors.

(yes) 10. POA&M signed off for item.

Revisions to the course mission may be required during the process of course development due to task analysis, resource constraints or similar reasons. Upon completion of course validation the original course mission may be discarded as it will be permanently documented in the curriculum outline.

SAMPLE COURSE MISSION

The Communications On-line Systems Operator (Basic) Course is designed to train ET, RM and CT (strikers and above), to establish and operate six on-line communications systems; the Bravo, Charlie, Delta, Golf, Kilo and November systems. Establishment of systems includes configuring and operating the KW37 (JASON), KG14 (CREON) and KW7 (ORESTES) crypto devices, R-1051 receivers, multiplexing equipment, keyers and converters, teletype terminal equipments and associated ancillary equipments without supervision under all shipboard readiness conditions.



SAMPLE PLAN OF ACTION AND MILESTONES (POA&M)*

*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

PROFESSOR ED SPEC COMMENTS:

The POA&M for a traditional classroom/lab delivery system is developed using 50 development manhours per hour of instruction. The rule of thumb of 50 hours per contact hour is based on the experience of previous FLETRACEN development projects. Experienced or especially talented developers may take less time or course complications may dictate more time. The estimated development manhours do not include reviewer or clerical manhours, thus some tasks are allotted more time than the estimated manhours would indicate. Note also that tasks 7-12 overlap allowing developers to be working on another task during clerical and review times. No task is complete until initialed in the last column of the POA&M indicating completion.

Samples and comments on the following pages provide details of tasks 3-13 on the POA&M. The POA&M steps with their documentation is sometimes referred to as an "audit trail". The POA&M should be retained in permanent file for annual course reviews and command inspections. The following checklist may be used to determine if a POA&M is satisfactory.

POA&M (Product #2)

_____ 1. The POA&M should be made up for a real, full length course, preferably the course of which a portion is being used as the Techdev Course project.

_____ 2. Are the startup constraints (if any) valid, or could they be overcome?

_____ 3. Are the estimated manhours reasonable? (based on 50 development manhours per hour of instruction.)

_____ 4. Are staff personnel assigned by name?

_____ 5. Do the estimated manhours allow the work to be completed by the noted due date?

_____ 6. Approved by approving authority (per POA&M)

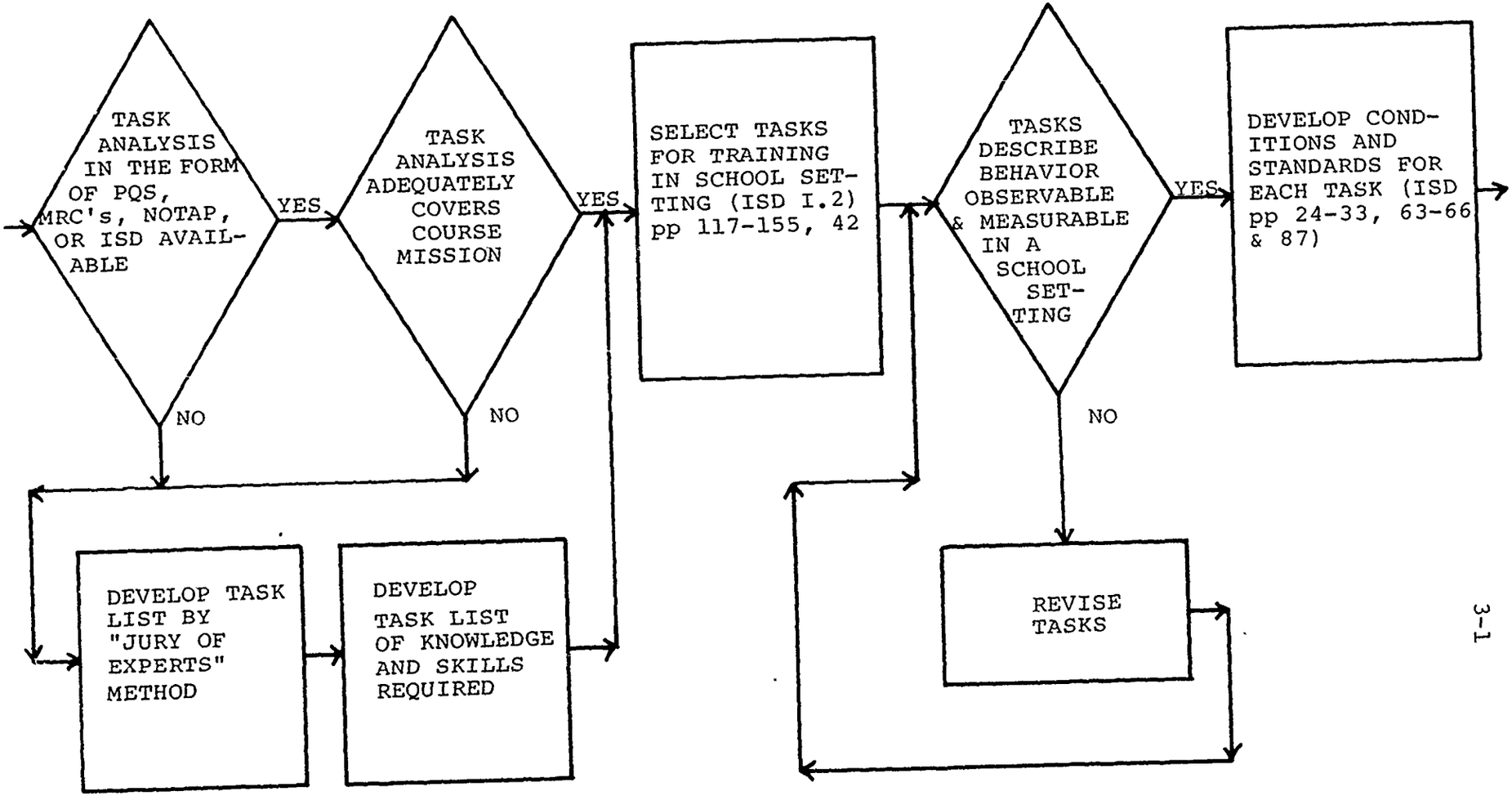
_____ 7. POA&M signed off for item

PLAN OF ACTION AND MILESTONES (POA&M) FOR DEVELOPMENT/REVISION OF COURSE
COMMUNICATION ON-LINE SYSTEMS OPERATOR (BASIC) J-201-0827

PERCENTAGE TIME		TASK	START	DUE	START UP CONSTRAINT	STAFF	TASK COMPLETION APPROVAL REQUIRED BY	EST MAN HOURS	TASK CERTIFIED COMPLETED DATE	TASK CERTIFIED COMPLETED INITIALS
1	1	Develop Course Mission	11/4/74	11/6/74	Assignment of Development Team	CTC Write RM1 Sparks	CISO/____ SCL DIR	24	11/4/76 11/6/76	[signature] [signature]
1	2	Develop POA&M	11/4/74	11/6/74	Training of Team	CTC Write RM1 Sparks	CISO/____ SCL DIR	24	11/6/76 11/4/76	[signature] [signature]
22	3	Develop Task Inventory with Conditions, & Standards	11/7/74	12/23/74	Availability of PQS Documents	CTC Write RM1 Sparks	CISO/____ SCL DIR	528		
1	4	Selected Delivery System is_____	11/4/74	12/24/74	_____	CTC Write RM1 Sparks Mr. Anderson	CISO/____ SCL DIR	24		
2	5	Develop Objectives	12/26/74	12/30/74	Task #3	CTC Write RM1 Sparks	CISO/____ SCL DIR	48		
5	6	Develop Tests	12/31/74	1/9/75	Task #5	CTC Write RM1 Sparks	CISO/____ SCL DIR	120		
7	7	Develop Curriculum Outline	1/10/75	2/7/75	Task #6	CTC Write RM1 Sparks	CISO/____ SCL DIR	168		
1	8	Construct Cover Letter Forwarding Curriculum Outline to Participating Training Activities	1/10/75	2/7/75	_____	CTC Write RM1 Sparks	CISO/____ SCL DIR	24		
5	9	Revise and Forward Curriculum Outline to Curriculum Control Authority	3/10/75	3/19/75	Letter from Activities	CTC Write RM1 Sparks	CISO/____ SCL DIR	120		
20	10	Develop Instructor's Guide	1/10/75	4/8/75	_____	CTC Write RM1 Sparks	CISO/____ SCL DIR	480		
5	11	Develop Student's Guide	1/10/75	4/8/75	_____	CTC Write RM1 Sparks	CISO/____ SCL DIR	120		
5	12	Develop Training Aids Request	1/10/75	4/8/75	_____	CTC Write RM1 Sparks	CISO/____ SCL DIR	120		
25	13	Validate Instruction	4/9/75	5/30/75	_____	CTC Write RM1 Sparks	CISO/____ SCL DIR	600		
100%		TOTALS	11/4/74	5/30/75				2400		

PRODUCT # 3

SAMPLE TASK INVENTORY*



*Refer to page i-5 for the complete thirteen Product Course Development Flow Chart.

6932P8

PROFESSOR ED SPECS COMMENTS:

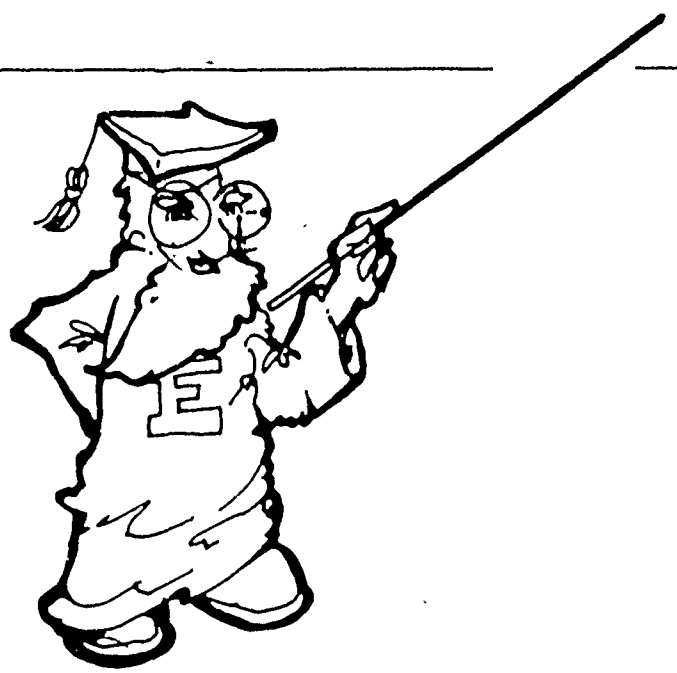
Task analysis is nothing more than the systematic breakdown of the course mission identifying all job tasks with supporting knowledges and skills.

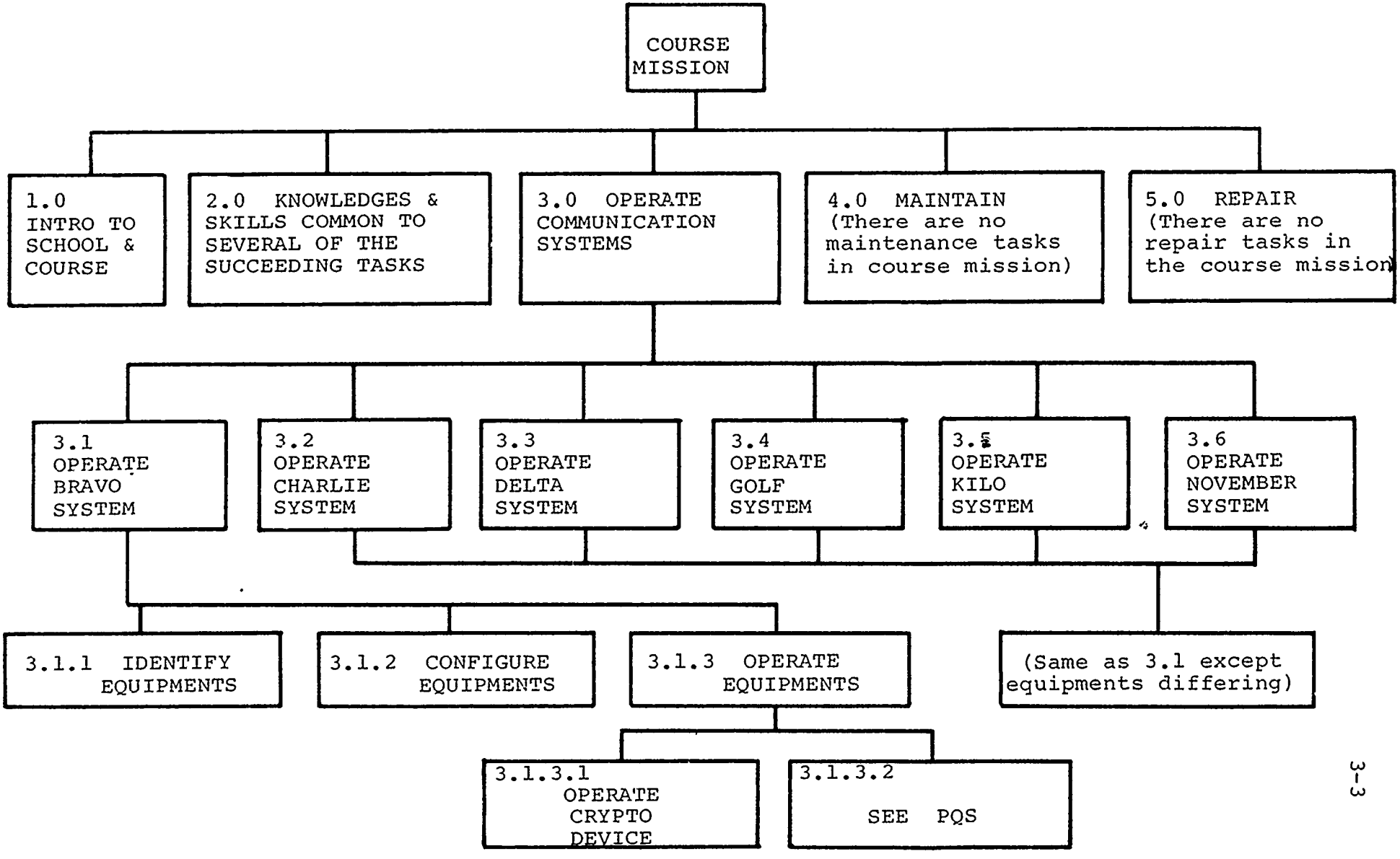
The facing sample, giving a preliminary course mission breakdown, also gives preliminary course sequencing. Block 1.0, Introduction to School and Course, is administrative in nature. While common to all formal courses and thus usually given a unit number, it does not directly support the course mission.

Block 2.0 is for knowledges and skills that are taught once at the beginning of the course rather than teaching the same thing several times in the areas where they apply. Examples would be (1) complying with safety precautions, (2) complying with security and tempest regulations and (3) soldering electrical connections.

Blocks 4.0 and 5.0, the maintain and repair blocks, are empty for this sample, but included as they are common to many courses. (In this sample, later sequencing will result in units for operating crypto devices (3.1.3.1) and equipments (3.1.3.2)).

From this preliminary analysis of the course mission we commence a search for already existing task analysis from PQS, MRCs, NOTAP and similar sources.




COURSE MISSION
1.0 INTRO TO SCHOOL & COURSE
2.0 KNOWLEDGES & SKILLS COMMON TO SEVERAL OF THE SUCCEEDING TASKS
3.0 OPERATE COMMUNICATION SYSTEMS
4.0 MAINTAIN (There are no maintenance tasks in course mission)
5.0 REPAIR (There are no repair tasks in the course mission)
3.1 OPERATE BRAVO SYSTEM
3.2 OPERATE CHARLIE SYSTEM
3.3 OPERATE DELTA SYSTEM
3.4 OPERATE GOLF SYSTEM
3.5 OPERATE KILO SYSTEM
3.6 OPERATE NOVEMBER SYSTEM
3.1.1 IDENTIFY EQUIPMENTS
3.1.2 CONFIGURE EQUIPMENTS
3.1.3 OPERATE EQUIPMENTS
(Same as 3.1 except equipments differing)
3.1.3.1 OPERATE CRYPTO DEVICE
3.1.3.2 SEE PQS

PROFESSOR ED SPECS COMMENTS:

The sequence of task analysis is to compile a job task inventory of all tasks and separate those into two groups, those not selected for instruction and those selected for instruction. Deriving the initial job task inventory can be very laborious. Fortunately, the job task inventory is usually available in the form of Personnel Qualification Standards (PQS), Maintenance Requirement Cards (MRC) and/or Navy Occupational Task Analysis Program (NOTAP).

In our communications On-line Systems Operator (Basic) sample course, the six PQS manuals on the facing page were found to adequately cover the course mission except for operation of crypto devices and configuring and operating communication systems as systems. The PQS manuals were then labeled "Task Analysis for Course J-201-0807." These manuals will be permanently retained as part of the task analysis documentation for the course.

If a job task inventory is not available, one must be constructed in accordance with NAVEDTRA 106A. Be sure to check with the Curriculum Instructional Standards Office (CISO) before commencing revision or development of any course without a job task inventory.

PERSONNEL

PERSONNEL

PERSONNEL

PERSONNEL

PERSONNEL

PERSONNEL QUALIFICATION STANDARD FOR R-1051 RECEIVER

PROFESSOR ED SPECS COMMENTS:

PQS contains not only job tasks but also supporting knowledges and skills for theory, systems and watchstations. The first step is to select job tasks for instruction. These are found in the watchstation section of the PQS manuals. There is a natural tendency to say, "Let's instruct all PQS job tasks." Sometimes this may indeed be appropriate. However, selection of all PQS job tasks could easily exceed the course mission, provide instruction for job tasks which the students have already mastered, provide instruction for tasks better accomplished on the job, or exceed reasonable resource requirements of time, equipment or manpower.

Thus, for this sample course, on the facing page, job tasks 301.11E, 301.12E, 301.13E and 301.14E were selected for instruction (indicated by circling these tasks in the PQS manual). Job task 301.15E was rejected for instruction because maintenance is outside the scope of the course mission. Job task 301.16E was rejected as this task is better taught aboard ship. The remaining tasks on this page are knowledges and will be considered later.

Although samples are not included here, job tasks were similarly selected or rejected from the remaining watchstations in this and the other five PQS manuals.

During the selection of job tasks for instruction, one option is to revise the course mission to include greater or fewer job tasks. The important part is that the selection process be documented so that later revision is easily accomplished without again having to repeat the entire task analysis process. Documentation by circling the chosen tasks in the PQS manuals is adequate.

301 WATCHSTATION - RADIO RECEIVER R-1051/URR OPERATOR

301.1 OPERATING INSTRUCTIONS

For the operating instructions listed below:

A. Describe the sequence of steps of this procedure.
B. Explain the reasons for each step of this procedure.
C. Discuss the parameter indication(s) that must be monitored.
D. Discuss the safety precautions that must be observed.
E. Perform the steps of this procedure.

		A	B	C	D	E
.11	Energizing	X	X	X	X	X
.12	Selecting frequency	X	X	X	X	X
.13	Selecting mode	X	X	X	X	X
.14	Deenergizing	X	X	X	X	X
.15	Required PMS	X	X	X	X	X
.16	Operating with external frequency standard	X	X	X	X	X

301.2 NORMAL OPERATIONS

For the conditions or evolutions listed below:

A. Define the parameters monitored.
B. Explain how the parameters change.
C. Describe the meter readings.
D. Describe the indicator lights.

		A	B	C	D
.21	During upper sideband operation	X	X	X	X
.22	During lower sideband operation	X	X	X	X
.23	During independent sideband operation	X	X	X	X
.24	During CW operation	X	X	X	X
.25	During AM operation	X	X	X	X
.26	During FSK operation	X	X	X	X

301.3 ABNORMAL CONDITIONS that could lead to EMERGENCIES and/or CASUALTIES

For the abnormal conditions listed below:

A. Describe all indications and alarms that would be received in/on the Radio Receiver.
B. List or recite the sequence of steps of the corrective action required.
C. Indicate an understanding of the abnormal conditions by describing:

1. Probable causes.
2. Operating limitations imposed by the abnormal conditions.
3. Other emergency, casualty, or abnormal conditions that may arise if this abnormal condition is not corrected.
4. How these abnormal conditions affect other watchstations.

		A	B	C
.31	Overheating	X	X	X
.32	Loss or variation in primary power	X	X	X
.33	Adverse atmospheric conditions	X	X	X

PROFESSOR ED SPECS COMMENTS:

Job tasks within the course mission but not identified in existing task analysis are added to the inventory by the "Jury of Experts" method. To insure that these additional job tasks are identified it is crucial that subject matter experts (SMEs) be part of the development team. The Learning Analysis Worksheet (CNET-GEN 1550/4) is the prescribed format for recording tasks. The minimum requirement is that the task be recorded in writing for permanent retention, be assigned an identification number and have observable and measurable conditions and standards.

Note the use of multiple action verbs in this sample. The single action verb "OPERATE" could also be used, however, the multiple action verbs of "ACTIVATE, SET-UP and SYNCHRONIZE" are considered more definitive.

For sample purposes all blocks of the learning objective analysis worksheet have been filled in although some of the blocks were not actually completed until the curriculum outline was drafted.

LEARNING OBJECTIVE ANALYSIS WORKSHEET

CNET-GEN 1550/4 (11-76) S/N 0197-LL-NF0-4730 *NAVEDTRA 106A refers.*

COURSE	UNIT/MODULE	LESSON TOPIC	TASK I.D. NUMBER	PAGE NO.
J-201-0827	4.0	4.1	1.0	1

fill out one section only.	TERMINAL OBJECTIVE NO.	JPM NO.	ENABLING OBJECTIVE NOS. THAT SUPPORT THE TERMINAL OBJECTIVE
[X] TERMINAL	9.0	NA	2.1.1, 2.2.1, 2.2.2, 2.2.3, 4.4.1
[ ] ENABLING	ENABLING OBJECTIVE NO.	TERMINAL OBJECTIVE NO. THE ENABLING OBJECTIVE SUPPORTS	

LEARNING OBJECTIVE ACTION STATEMENT

ACTIVATE, SET-UP and SYNCHRONIZE the KWR-37 crypto device
(NOTE: No PQS for this task)

CONDITION

Using normal and late-start procedures given:
- -an accurate clock
- -a KWR-37 with encoded input signal and teletype printer
- -applicable publications

STANDARD

- -observing security and tempest procedures
- -observing safety precautions
- -obtain plain language messages on teletype under both starting conditions with a maximum of three tries for each condition.

LEARNING CATEGORY

NA

ITEMS

Job Sheet 4-4-1J.
Written Test 4-4, items 1-6 on battery A and items 1-6 on battery B

MEDIA SELECTION

Traditional classroom/lab using actual equipment with equipment to simulate an incoming encoded signal.

EQUIPMENT REQUIRED FOR PERFORMANCE OF OBJECTIVE

-all KWR-37 anciltary devices.
(see curriculum outline)

EXISTING MATERIALS SELECTED

[X] YES [ ] NO *If YES, outline below.*

-on hand equipment including training equipment to simulate an incoming encoded signal. (see Annex I of curriculum outline)

PROFESSOR ED SPECS COMMENTS:

Having selected the job tasks for instruction, we now select supporting knowledges and skills. Again circling the selected knowledge or skill is an acceptable procedure. PQS watch-station knowledge tasks 301.22 thru 301.25, 301.31 and 301.32 were rejected for instruction due to being (1) pre-requisite knowledge for ET, RM and CT strikers, (2) better taught aboard ship or (3) outside of the course mission.

301 WATCHSTATION - RADIO RECEIVER R-1051/URR OPERATOR

301.1 OPERATING INSTRUCTIONS

For the operating instructions listed below:

A. Describe the sequence of steps of this procedure.
B. Explain the reasons for each step of this procedure.
C. Discuss the parameter indication(s) that must be monitored.
D. Discuss the safety precautions that must be observed.
E. Perform the steps of this procedure.

		A	B	C	D	E
.11	Energizing	X	X	X	X	X
.12	Selecting frequency	X	X	X	X	X
.13	Selecting mode	X	X	X	X	X
.14	Deenergizing	X	X	X	X	X
.15	Required PMS	X	X	X	X	X
.16	Operating with external frequency standard	X	X	X	X	X

301.2 NORMAL OPERATIONS

For the conditions or evolutions listed below:

A. Define the parameters monitored.
B. Explain how the parameters change.
C. Describe the meter readings.
D. Describe the indicator lights.

		A	B	C	D
.21	During upper sideband operation	X	X	X	X
.22	During lower sideband operation	X	X	X	X
.23	During independent sideband operation	X	X	X	X
.24	During CW operation	X	X	X	X
.25	During AM operation	X	X	X	X
.26	During FSK operation	X	X	X	X

301.3 ABNORMAL CONDITIONS that could lead to EMERGENCIES and/or CASUALTIES

For the abnormal conditions listed below:

A. Describe all indications and alarms that would be received in/on the Radio Receiver.
B. List or recite the sequence of steps of the corrective action required.
C. Indicate an understanding of the abnormal conditions by describing:

1. Probable causes.
2. Operating limitations imposed by the abnormal conditions.
3. Other emergency, casualty, or abnormal conditions that may arise if this abnormal condition is not corrected.
4. How these abnormal conditions affect other watchstations.

		A	B	C
.31	Overheating	X	X	X
.32	Loss or variation in primary power	X	X	X
.33	Adverse atmospheric conditions	X	X	X

PROFESSOR ED SPECS COMMENTS:

The PQS qualification card indicates supporting knowledges and skill requirements from the theory and systems section of PQS. Note the dark black arrows on the upper right hand section of the facing page.

FINAL QUALIFICATION AS
RADIO RECEIVER R-1051/URR OPERATOR

NAME _____ RATE _____

These Qualification Cards are to be used as a record of satisfactory completion of the designated section of the Qualification Standard. Only specifically designated supervisors may signify completion of the applicable sections of the Qualification Standard by either written and/or oral examination, or by observing the performance and discussing designated evolutions. The examination or checkout need not cover every item indicated in the Qualification Standard, but a sufficient number should be covered to demonstrate the examinee's knowledge. If the Supervisor gives away his signature too easily, he can expect unnecessary difficulties in future routine operations.

If the trainee attends the appropriate shore based school, selected items may be signed off at the school. However, in all cases, the responsibility for final qualification rests with the ship or shore team, with each trainee demonstrating knowledge of and proficiency on the equipment as it is installed in his own ship or shore installation. When the trainee arrives on board his ship or shore installation and discovers the installation does not have some of the system components or the complete systems as indicated in his Qualification Standard, those qualification requirements of the Standard are to be disregarded.

At the end of each watchstation is a suggested time frame for completion. This time frame was developed by the subject matter experts in the workshop who wrote this PQS. The number of weeks is based on the assumption that most of it would be normal inport time with only some local operations. This figure will have to be adjusted by your command to reflect deployment or overhaul time. Feedback information on how long it actually takes you to complete each watchstation is required so that future reprints of this PQS can reflect more accurately the average time it actually requires an individual to complete the watchstation.

These qualification cards are working documents to be carried and safeguarded by the above individual during his training so that he will at all times be aware of the tasks remaining to be completed.

QUALIFICATION

Having observed _____ (Name/Rank/Rate)

perform as on watch, on station, and having examined him either orally or by written examination in the subjects listed in the Qualification Standard and found his performance to be satisfactory, it is recommended that he be designated a Qualified RADIO RECEIVER R-1051/URR OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Division Officer)

RECOMMENDED _____ DATE _____
(Department Head)

QUALIFIED _____ DATE _____
(Commanding Officer)

0502-221-9064

401 WATCHSTATION - RADIO RECEIVER R-1051/URR OPERATOR

Complete the following theory qualifications: 108

Complete the following system qualifications: 201 and 202

401.1 Perform the following practical factors (In accordance with the requirements set forth in 301.1)

		SIGNATURE	DATE	POINTS
.11	Energizing			1
.12	Selecting frequency			1
.13	Selecting mode			1
.14	Deenergizing			1
.15	Required PMS			1
.16	Operating with external frequency standard			1

401.2 Discuss with a qualified operator the conditions or evolutions listed below. (In accordance with the requirements set forth in 301.2)

.21	During upper sideband operation			1
.22	During lower sideband operation			1
.23	During independent sideband operation			1
.24	During CW operation			1
.25	During AM operation			1
.26	During FSK operation			1

401.3 Discuss with a qualified operator the following abnormal conditions that could lead to emergencies and/or casualties. (In accordance with the requirements set forth in 301.3)

.31	Overheating			1
.32	Loss or variation in primary power			1
33	Adverse atmospheric conditions			2

401.4 Discuss with or perform under the supervision of a qualified operator the following emergencies and/or casualties. (In accordance with the requirements set forth in 301.4)

.41	Blown fuses			1
42	Loss of primary power			1
43	Loss of signal			1

PROFESSOR ED SPECS COMMENTS:

As previously done for watchstation tasks, selection of systems tasks for instruction is indicated by circling the task. These tasks are knowledges and skills in support of watchstation tasks. The uncircled tasks were rejected for instruction for one or more of the following reasons:

(1) actual physical location tasks are best accomplished aboard ship,

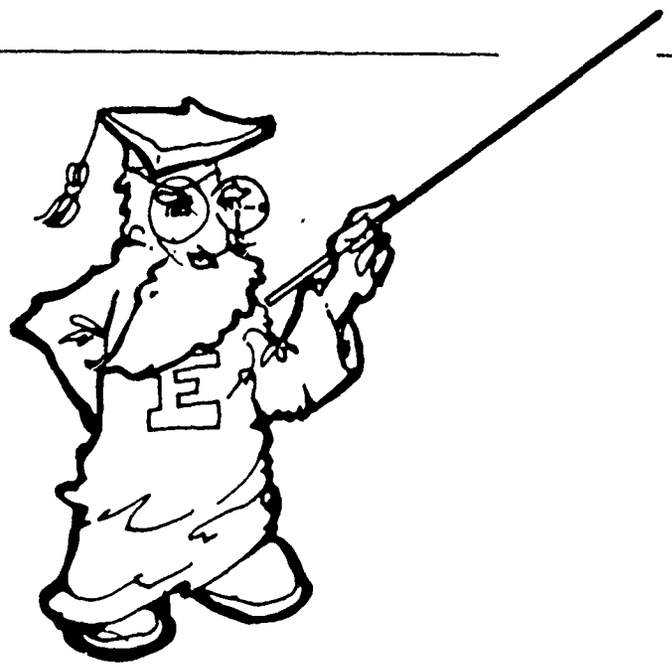
(2) beyond the scope of the course mission,

(3) component not used for the communications systems in the course mission,

(4) time or equipment resource constraints and/or

(5) prerequisite knowledge or skill by ET, RM, CT strikers.

This selection process continues until all supporting knowledges and skills for instruction are identified.



202 FRONT PANEL CONTROLS R-1051/URR SYSTEM

202.1 Explain the function(s) of the FRONT PANEL CONTROLS R-1051/URR SYSTEM as stated in Radio Receiver R-1051/URR Technical Manual (NAVSHIPS 94841).

.11 Refer to a standard print of this system during the rest of this discussion.

202.2 SYSTEM COMPONENTS - GENERAL

Discuss the designated items for each component listed below:

A. Explain the function(s) of the component in terms of what it does for the system.
B. Show or describe the actual physical location of this component.
C. List or describe the source(s) of control signal(s).
D. List the position(s) and function(s) of each position of this component.

		A	B	C	D
.21	LSB line level control	X	X		
.22	LSB line level switch	X	X		X
.23	RF gain control	X	X		
.24	LSB phone level control	X	X		
.25	Mode selector switch	X	X		X
.26	BFO frequency control	X	X		
.27	USB phone level control	X	X		
.28	USB line level control	X	X		
.29	USB line level switch	X	X		X
.210	Cycles switch	X	X		
.211	Venier control	X	X		
.212	10 MHz control	X	X		
.213	1 MHz control	X	X		
.214	100 KHz control	X	X		
.215	10 KHz control	X	X		
.216	1 KHz control	X	X		
.217	USB line meter	X	X		
.218	LSB line meter	X	X		
.219	Vernier indicator	X	X	X	
.220	Fuses (2)	X	X		
.221	LSB phone jack	X	X		
.222	USB phone jack	X	X		

202.3 COMPONENT PARTS

A. There are no component parts in this system to be discussed.

202.4 PRINCIPLES OF OPERATION

A. There are no principles of operation to be discussed.

202.5 MAJOR PARAMETERS

A. There are no major parameters in this system to be discussed.

PROFESSOR ED SPECS COMMENTS:

Ideally, with all the job tasks, supporting knowledge tasks and supporting skill tasks now identified, one just has to add conditions and standards and one has the terminal and enabling objectives for the course; job tasks becoming terminal objectives and the supporting tasks becoming enabling objectives. Unfortunately, development of objectives is usually not that simple for one or more of the following reasons:

(1) the task behavior as stated is not observable or measurable in a school environment (e.g., EXPLAIN),

(2) many tasks are essentially duplicates of other tasks,

(3) the number of tasks may be excessive, sometimes exceeding one thousand. To have a course with such a large number of objectives is impractical,

(4) a given task may be performed very differently under varying conditions, so different that more than one objective is necessary for a given task,

(5) tasks are identified at several levels of breakdown,

(6) tasks are derived by more than one task analysis procedure and may appear to be incompatible, overlapping or otherwise confusing.

However, no sweat, this is where subject matter expertise and common sense earn their money. Work first at deriving terminal objectives from the lowest practical level of the job tasks. Change action verbs and combine or split job tasks as practical. Use the preliminary course mission breakdown (page 3-3) as a guide.

In this sample, five of the PQS job tasks have been combined into a single job tasks of the general type, "OPERATE equipment X". This learning analysis worksheet is the basis for one of the terminal objectives of the course. Concerning combining job tasks, the following general rule applies, "there shall be at least one terminal objective for each PQS watchstation section from which tasks have been selected for instruction (in this sample, 301 WATCHSTATION-RADIO RECEIVER R-105/URR OPERATOR)".

LEARNING OBJECTIVE ANALYSIS WORKSHEET
CNET-GEN 1550/4 (11-76) S/N 0197-LL-NF0-4730

NAVEDTRA 106A refers.

COURSE	UNIT/MODULE	LESSON TOPIC	TASK I.D. NUMBER	PAGE NO.
J-201-0827	2.0, 4.0 thru 6.0	2.1	*NAVEDTRA 43190-6A	

fill out one section only.		TERMINAL OBJECTIVE NO.	JPM NO.	ENABLING OBJECTIVE NOS. THAT SUPPORT THE TERMINAL OBJECTIVE
	[X] TERMINAL	5.0	NA	2.1.1, 2.1.2, 4.4.1 5.4.1
	[ ] ENABLING	ENABLING OBJECTIVE NO.	TERMINAL OBJECTIVE NO. THE ENABLING OBJECTIVE SUPPORTS	

LEARNING OBJECTIVE ACTION STATEMENT
ENERGIZE, TUNE and DEENERGIZE an R-1051/URR (series) radio receiver.

CONDITION
Without supervision given:
-R-1051B/URR or R-1051D URR radio receiver
-frequency shift mode emission
-single sideband mode emission
-loss of signal

STANDARD
meter readings and indicator lights must be within tolerance specified in Operator's Handbook Radio Receiver R-1051/URR (NAVSHIPS 0967-970-9018, Volume II or NAVSHIPS 0967-970-9018 Volume I.)

LEARNING CATEGORY
NA

ITEMS
Written Test 2.1.1T and 2.4.1T
Job Sheets 4-3-1J and 4-4-1J
Performance Test 5.4.1T

MEDIA SELECTION
None

EQUIPMENT REQUIRED FOR PERFORMANCE OF OBJECTIVE
See Curriculum Outline Annex A

EXISTING MATERIALS SELECTED
[X] YES [ ] NO *If YES, outline below.*
Existing equipment including R-1051B and R-1051D/URR radio receivers and associated equipment (see Annex I of curriculum outline)

*PQS 301.11E, 301.12E, 301.13E, 301.14E, 301.43F

PROFESSOR ED SPECS COMMENTS:

LOST??!!

For a clearer picture of the course development sequence, look at the following related pages:

-page 3-17 for the terminal objective which is supported by enabling objective 2.1.1.

-page 3-15 for the PQS task analysis items which are the base for enabling objective 2.1.1.

-page 3-5 for the PQS book from which the task analysis items were drawn.

-page 1-3 for the course mission which is supported by enabling objective 2.1.1.

-page 6-7 thru 6-9 for the test of this objective.

-page 7-37 for appearance of enabling objective 2.1.1 in the curriculum outline in smooth form.

LEARNING OBJECTIVE ANALYSIS WORKSHEET

CNET-GEN 1550/4 (11-76) S/N 0197-LL-NF0-4730

NAVEDTRA 106A refers.

COURSE	UNIT/MODULE	LESSON TOPIC	TASK L.O. NUMBER	PAGE NO.
J-201-0827	2.0	2.1	NAVEDTRA 43190.6A*	

fill out one section only.	TERMINAL OBJECTIVE NO.	JPM NO.	ENABLING OBJECTIVE NOS. THAT SUPPORT THE TERMINAL OBJECTIVE
☐ TERMINAL			
☒ ENABLING	ENABLING OBJECTIVE NO. 2.1.1	TERMINAL OBJECTIVE NO. THE ENABLING OBJECTIVE SUPPORTS 5.0	

LEARNING OBJECTIVE ACTION STATEMENT

MATCH each front panel control on the R-1051/URR radio receiver with its name and function.

CONDITION

GIVEN:

-a front panel diagram
-a list of names
-a list of functions

STANDARD

to a 90% criteria

LEARNING CATEGORY

N/A

TEST ITEMS

Written Test 2-1-1T Battery A, items 2-21
2-1-1T Battery B, items 2-21

MEDIA SELECTION

None

EQUIPMENT REQUIRED FOR PERFORMANCE OF OBJECTIVE

None

EXISTING MATERIALS SELECTED

☒ YES ☐ NO *If YES, outline below.*

Transparency 2-1-1vx of R-1051 front panel

*PQS 202.23A, .25A, .217A thru .219A

PROFESSOR ED SPECS COMMENTS:

After completing learning objective analysis worksheets for all job tasks, the next step is to complete similar worksheets for each supporting knowledge and skill selected for training. The worksheets are then sequenced into the order they will be presented and given a sequence number. These worksheets are retained in a permanent file as part of the task analysis.

The following checkoff list may be used to insure the task analysis step is complete.

_____ Course mission includes all job tasks selected for instruction along with their supporting knowledges and skills.

_____ Tasks that are "nice to know" but not required for accomplishing the mission objective have been deleted from instruction.

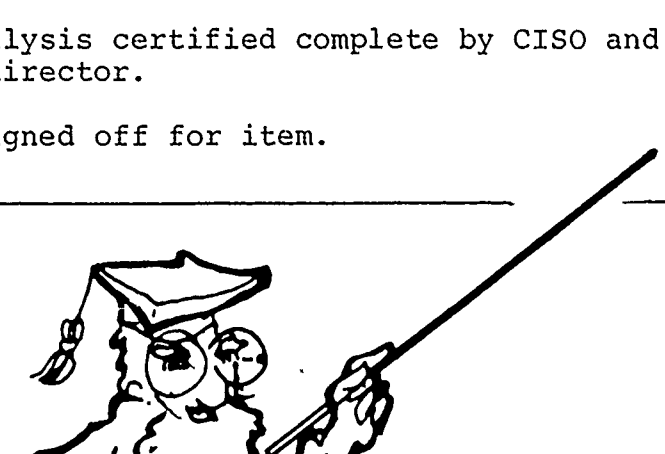
_____ Learning objective analysis worksheets (CNET-GEN 1550/4) are permanently available and include all tasks selected for instruction.

_____ Learning objective analysis worksheets (CNET-GEN 1550/4) have observable and measurable behaviors with conditions and standards.

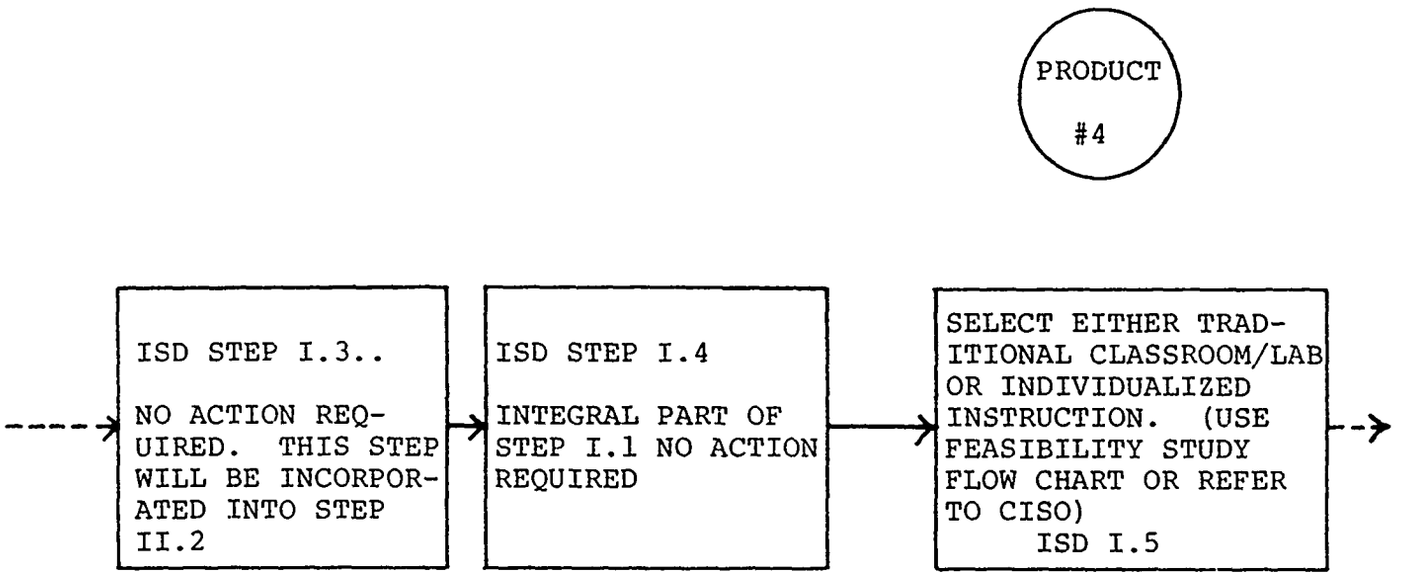
_____ Learning objective analysis worksheets (CNET-GEN 1550/4) identify the tasks from which they were drawn.

_____ Task analysis certified complete by CISO and school director.

_____ POA&M signed off for item.



SAMPLE SELECTION OF DELIVERY SYSTEM*

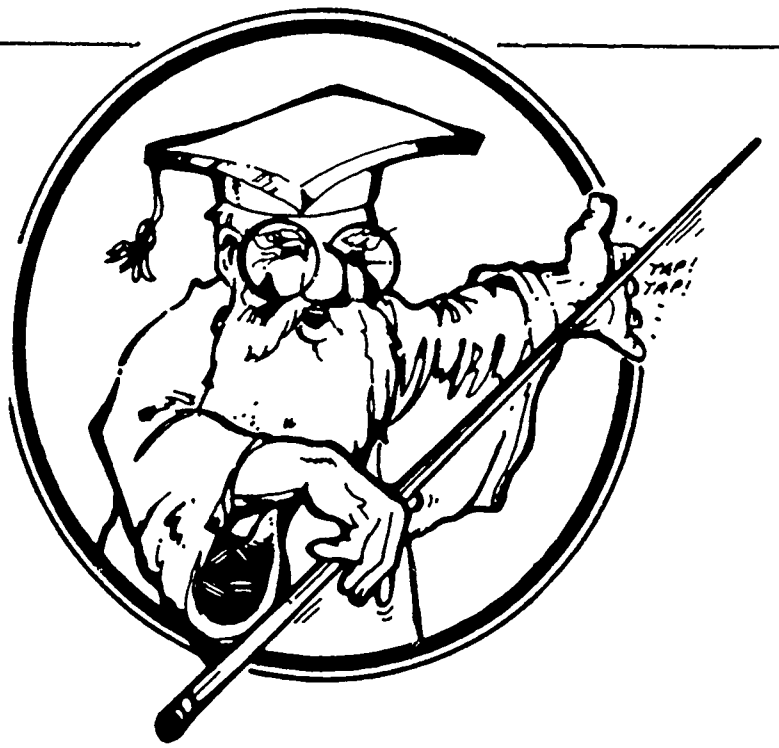


*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

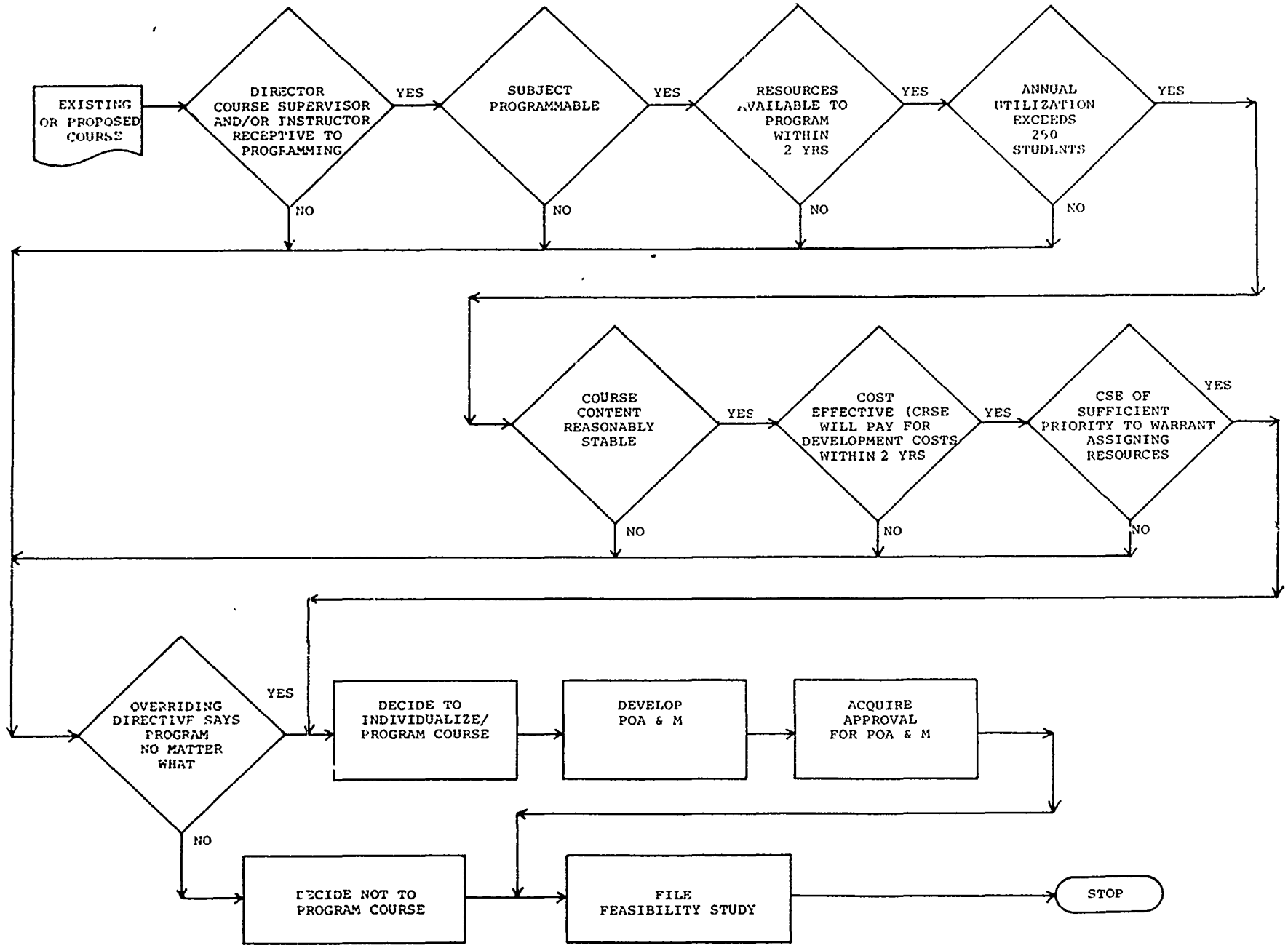
PROFESSOR ED SPECS COMMENTS:

Most school developed courses will be by the traditional classroom/lab delivery system which provides lock-step instruction. This flowchart gives several criteria which must be met before an individualized method of instruction is to be developed. If individualization of the course appears feasible, consult with CISO personnel.

If computer managed instruction (CMI), computer assisted instruction (CAI) or similar delivery systems are available, consult with CISO personnel for selection procedures.

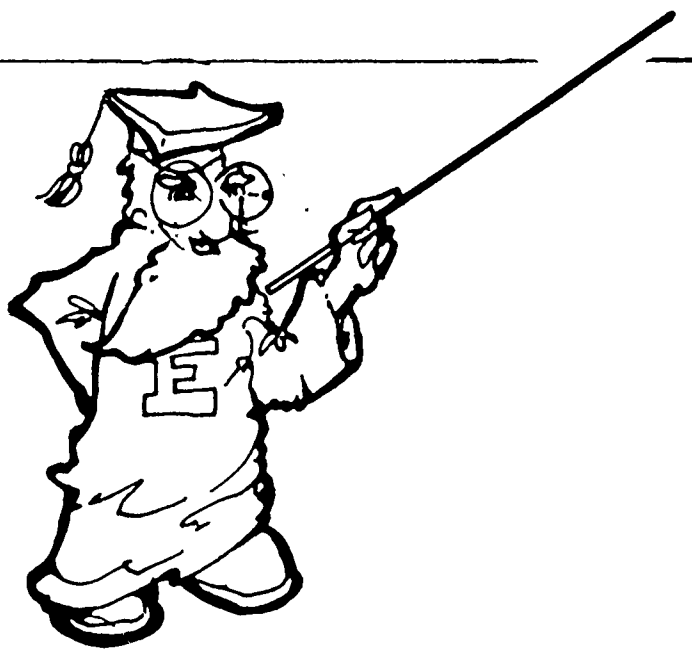


FEASIBILITY STUDY GUIDELINES CHART

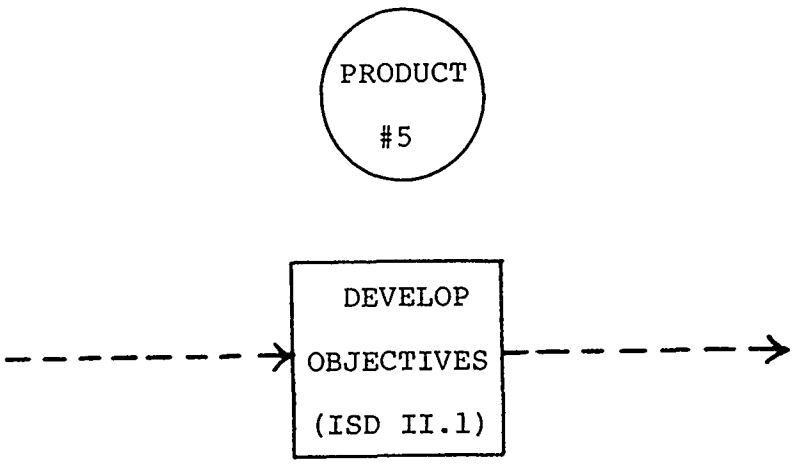


PROFESSOR ED SPECS COMMENTS:

As with other POA&M steps, selection of delivery system is complete when initialed by the school director and CISO on the POA&M.



SAMPLE OBJECTIVES



*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

PROFESSOR ED SPECS COMMENTS:

The "develop objectives" step is simply taking the behaviors, conditions and standards from the learning analysis worksheets and arranging them into a smooth flowing form. The objectives are then documented as a permanent part of the curriculum outline.

In-depth guidance on the writing of objectives is provided by Volume II of the ISD Manual: NAVEDTRA 106A, Interservice Procedures for Instructional Systems Development. Three key points to keep in mind when preparing objectives are quoted directly from Volume II as follows:

> 1. In some cases, the terminal learning objectives will represent the behavior accurately, but will not require the ultimate level of proficiency that is required on the job. (p. 3)
>
> 2. ...objectives will specify what the learner will accomplish as a result of having received the instruction, and will specify to the instructional designer the exact behaviors the instruction is expected to produce. (p. 4) (underlining added)
>
> 3. Prior to designing instruction to train individuals to perform tasks, it is necessary to translate the tasks into terminal learning objectives to be attained during training. (p. 4) (underlining added)

It is evident, then, from the foregoing from NAVEDTRA 106A that terminal objectives should be based on job behaviors and written to conform to them when they can be measured in the course. Such is the case with the terminal objectives for this sample course: Opportunity for the performance of the actual job behaviors can be adequately duplicated in the course, and the terminal objectives are written accordingly. On the contrary, when the job behaviors cannot be directly measured in the course, the terminal objectives should be written in such a manner that they (the objectives) are measurable in the course. This means that the best a course designer can do sometimes is to write terminal objectives with course-related behaviors, conditions, and standards. Serious consideration should be given, however, to devising ways of measuring actual on-the-job behaviors before following the latter approach.

See the curriculum outline, page 7-1, for samples of objectives. The following checklist may be used as a guide for evaluating.

CHECKLIST FOR SELECTING, WRITING, EVALUATING LEARNING OBJECTIVES

	YES	NO
1. General		
a. Are the statements free from grammatical, spelling, and typographical errors?	____	____
b. Has the writer avoided the use of unfamiliar words?	____	____
c. Is the sentence structure clear, concise, simple and straightforward?	____	____
d. Is the use of punctuation, abbreviations and hyphenation correct and uniform?	____	____
e. Do the statements avoid ambiguity?	____	____
f. Is extraneous or confusing information excluded?	____	____
2. Behavior		
a. Does the statement clearly and precisely describe what the student will be doing when he demonstrates what he has learned?	____	____
b. Does the statement avoid the use of "loaded words"?	____	____
c. Does the statement describe a complete action?	____	____
d. Does the statement describe a meaningful unit of performance?	____	____
e. Is the behavior clearly relevant to the job or task?	____	____

3. Conditions

a. Does the statement clearly and completely describe the conditions under which the student must demonstrate the required behavior? _____ _____

b. Does the statement identify what the student will be given to do the job or task (tools, equipment, job aids, or materials)? _____ _____

c. Does the statement clearly identify what tools, equipment, job aids, or materials the student will be denied (when this is pertinent)? _____ _____

d. Does the statement describe the physical environment (space, climatic conditions, lighting conditions, and the like) when these are significant? _____ _____

e. Does the statement describe the assistance the student will receive (if any)? _____ _____

f. Does the statement describe the amount and kind of supervision (if any) the student will receive during job performance? _____ _____

4. Standard

a. Does the statement clearly describe how well the student must perform? _____ _____

b. Is the minimum level for acceptable performance clearly defined? _____ _____

c. Is the quality of the work products or services defined in terms of standards of accuracy, completeness, format, sequence, clarity, neatness, tolerances, or number of errors permitted? _____ _____

d. Is the quantity of the work products or services defined in terms of the number of units to be completed per unit of time or in terms of the total number of units required? _____ _____

e. Are time standards clearly defined in terms of duration of performance, speed of performance, or total time allowed for performance? _____ _____

f. Are the standards realistic and attainable? _____ _____

g. Are the standards relevant to the job or task? _____ _____

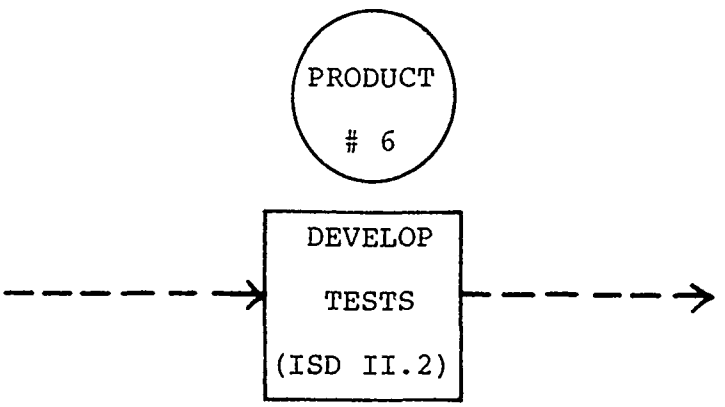
h. Are the standards measurable? _____ _____

i. Do the standards avoid the use of such imprecise words as "effective", "proper", and "average"? _____ _____

5. General

a. Have the objectives been split into groups of terminal and enabling objectives? _____ _____

b. POA&M signed off for item. _____ _____



SAMPLE

TESTS

*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

PROFESSOR ED SPECS COMMENTS:

The product of a course is "A GRADUATE WHO CAN DO THE JOB." We know he can do the job because he's passed our tests. Since the tests are the school's measure of the student's ability to perform on the job, it is crucial that the tests be as job related as possible.

What is criterion testing? While there are many definitions available for criterion tests (sometimes called criterion referenced tests), a reasonably clear way to view it is to look at the two basic test types, norm referenced and criterion referenced. Norm referenced tests grade a student by his performance compared with other students and is commonly known as grading on a curve or by class standing. Criterion referenced testing, by contrast, grades by comparison to a standard irrespective of the performance of other students. Both norm referenced and criterion referenced testing may use written and/or performance tests.

HAIRMANIA

Once upon a time, as the crow flies, the king of Hairmania decided to shave off his beard.

"It is an event that will bring attention and fame--not to mention tourists," he beamed. "Bring the Royal Barber."

"But sire," lamented his advisor, "there isn't one. No one has shaved for a hundred years."

"Hairesy!" exploded the king. "No wonder we're so crowded. Sally ye forth, therefore, and find me the best in all the land."

Which he did. And when at last the most famous barber was found, he was sent to the Royal Three Committees for the Royal Testing.

"Tell us about the history of barbering," asked the first committee.

And he did.

"Tell us about the importance of barbering," asked the second committee.

And he did.

"Tell us what instruments you would use to shave the king," asked the third committee.

And he did.

Whereupon they draped his neck with their Medallion of Approval and led him before the king. Wasting no time, the barber prepared his tools and spread his cloth. But when he picked up his razor with a swirling flourish--he accidentally sliced a piece off the king's ear.

"Gadzooks!" cried the king. "You've cut off my royal ear!"

"Ooops," chorused the nine voices of the Royal Three Committees.

"Oops?" astonished the king. "I ask for skill and you give me oops?"

"We're very sorry," apologized the Royal Three Committees. "We must have lost our heads."

"A capital idea," rejoiced the king, and sprang himself forth to make it permanently so.

And ever since and forever more,
There hang nine heads on the Royal Door.
For this was the fate of the Committees Three...
May it never befall such as me...or thee.

And the moral of this fable is
HE WHO ASKS WRONG QUESTIONS MAY LOSE MORE THAN HIS FACE.

PROFESSOR ED SPECS COMMENTS:

Frequently, test construction requires sharpening up or revising terminal and enabling objectives as can be seen from the following flow chart. This is the major reason why tests should be developed in their final form before the curriculum outline and lesson topic guides are developed.

Types of testing, from the most desirable to the least desirable are as follows:

1) Performance tests duplicating job conditions and standards.

2) Performance tests simulating job conditions and standards.

3) Written tests comprehensively testing knowledges required for job performance.

4) Performance application where the student performs to duplicated or simulated job conditions and standards with instructor supervision and assistance.

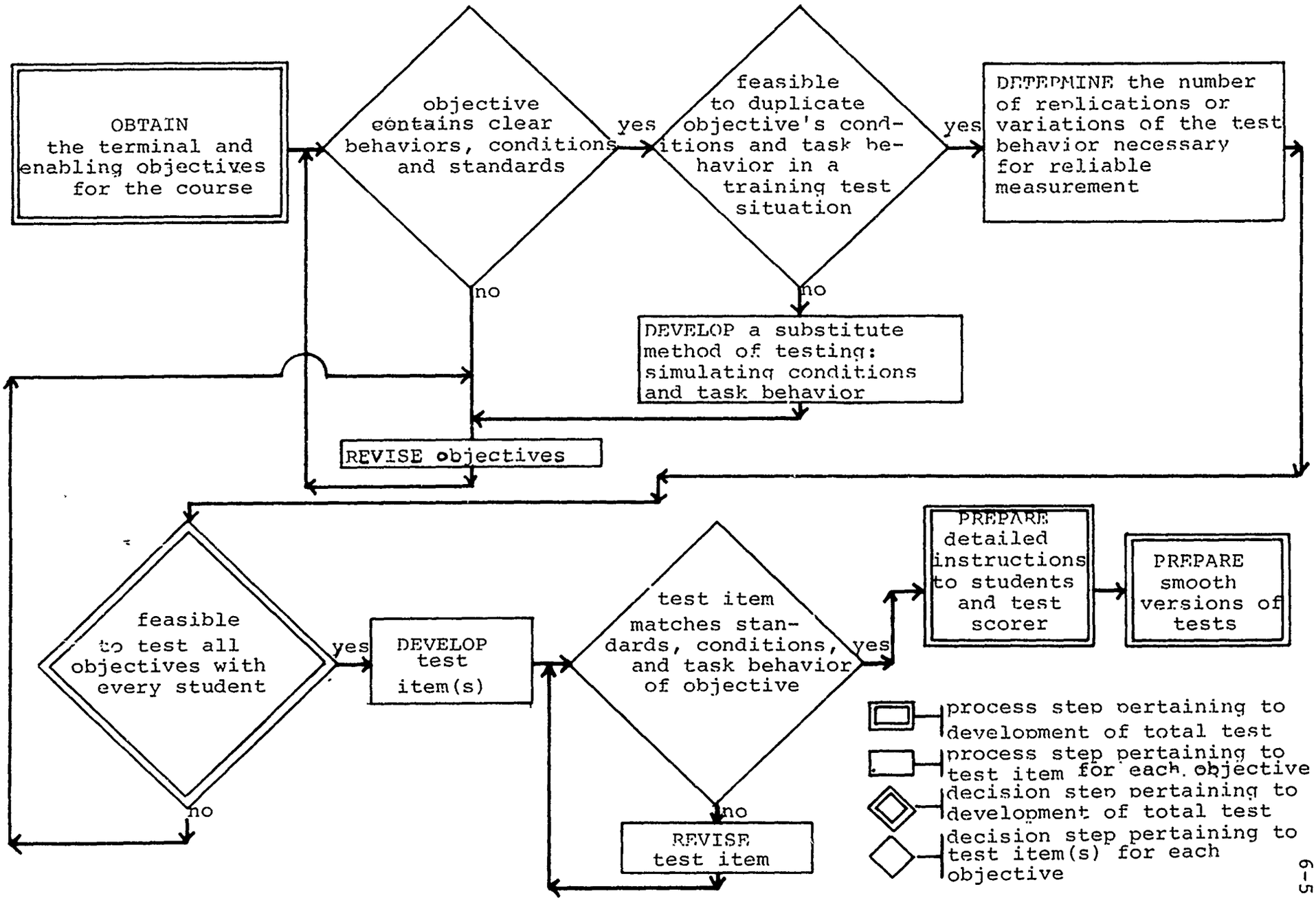
5) Written tests randomly testing a sample of the knowledges required for job performance.

6) Attendance. This is really no testing at all and leaves the school in a very weak position in stating the graduate can "DO THE JOB" for which the course was designed.

Testing types 3 thru 5 are useful as progress tests in preparation for types 1 or 2 testing and for situations where types 1 or 2 are unfeasible or uncomprehensive.

In all instances, testing is dictated by the behaviors (tasks), conditions and standards stated in the terminal/enabling objectives. If the stated behavior is very critical, i.e., 100%, without error, etc., it should be taught and tested under conditions as close as possible to those required on the job as described in types 1 and 2 above. Less critical behaviors can be taught by many other methods, i.e. lecture, reading assignments, observation, etc., and achievement of same can be tested by one, or a combination of, types 3 through 5 above. The criticality of objective behaviors is established during the analysis phase by subject matter experts and is based on their relative importance to the completion of the job for which the students are being trained to perform.

STEPS IN CRITERION TEST DEVELOPMENT



PROFESSOR ED SPECS COMMENTS:

The title numbering system for tests is the same as for instruction sheets, job sheets, notetaking sheets and information sheets.

WRITTEN TEST 2-1-1T
- 2-1-1T
  - 1T
    - T — Test
    - 1 — The first test administered in this lesson topic (2.1)
  - 2-1 — The unit and lesson topic number in which this test is administered

Page numbering is also the same as for student's guide materials.

2-1-1T1
- 2-1-1T
  - 1 — First page of this test
- 2-1 — Number of the test (see above)

Note that the objective has a 90 percent criteria for a standard. This means that there must be at least ten test items and of these he may miss only one and still pass.

DO NOT MARK TEST BOOKLET

COMMUNICATIONS ON-LINE SYSTEMS OPERATOR (BASIC)
(J-201-0827)

WRITTEN TEST 2-1-1T

BATTERY B

This test was devised to measure your achievement of the following enabling objective:

2.1.1 Given a front panel diagram of an R-1051/URR radio receiver, a list of names and a list of functions, you will be able to MATCH each frequently used front panel control with its name and function to a 90% criteria.

DIRECTIONS TO THE STUDENT:

Ensure that you have a two page test booklet and an answer sheet.

On the answer sheet, complete the blank for name (last name followed by initials), class no., rate, date, test booklet no. and battery.

You will be allowed ten (10) minutes to complete the test.

If you have any questions, just raise your hand. Remain seated and your instructor will come to you.

You must complete 18 out of 20 items correctly in order to achieve a passing grade.

When you have completed the test, turn it in to your instructor. At that time you may leave the room.

Items 1-11 are names of controls. ON YOUR ANSWER SHEET place the letter from the diagram that matches the numbered name.

Items 12-22 are functions. ON YOUR ANSWER SHEET place the letter from the diagram that matches the numbered function.

EXAMPLE: Item 1 is "FUSE" and item 22 is "Protects receiver from overload". On the answer sheet items 1 and 22 should have the letter "B" placed beside them indicating that item "b" on the diagram is a fuse and protects the receiver from overload.

PROFESSOR ED SPECS COMMENTS:

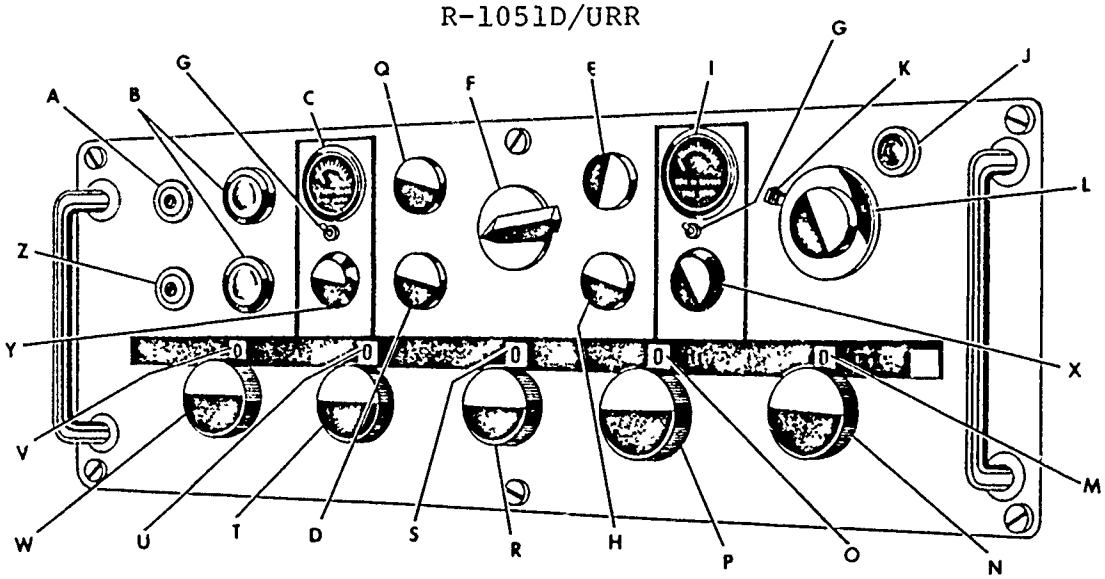
This test provides comprehensive coverage for enabling objective 2.1.1 which calls for a student behavior of "MATCH". It also tests PQS systems knowledge items selected for instruction on the R-1051 front panel controls. Obviously, passing this progress test does not imply that the student has met the terminal objective which calls for operating the R-1051. Performance testing on the R-1051 occurs later in the course. The knowledges tested here are a necessary prerequisite for meeting the time standard during the performance test.

This matching written test serves the additional purpose of early identification of students having problems with the course.

DO NOT MARK TEST BOOKLET

WRITTEN TEST 2-1-1T BATTERY B

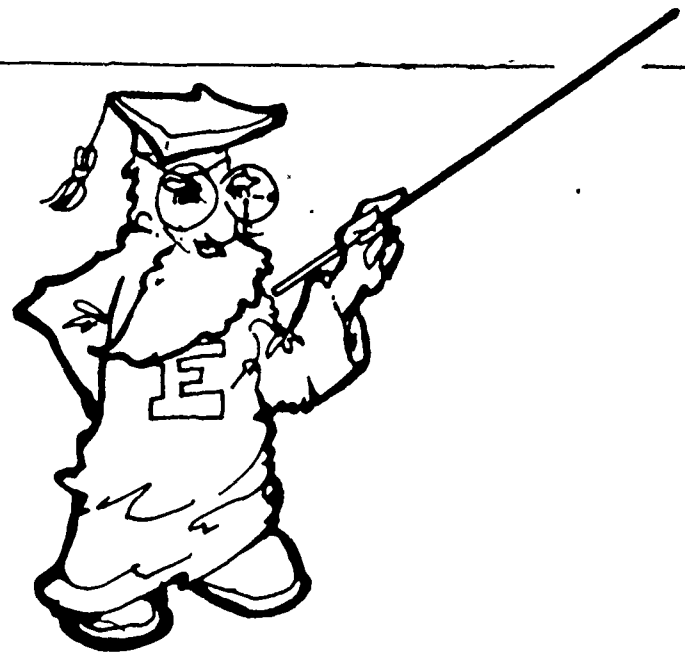
R-1051D/URR



____ 1. Fuse
____ 2. Mode Selector
____ 3. RF Gain Control
____ 4. USB Phone Tack
____ 5. 10 MHz Control
____ 6. Audio Level Meter
____ 7. Vernier Control
____ 8. 1 KHz Control
____ 9. Audio Level Switch
____10. USB Phone Level Cont.
____11. AGC Switch
____12. Selects 1 KHz digit of operating freq.
____13. Selects 10 MHz digit of operating freq.
____14. Used to provide continuous tuning
____15. Selects AGC function
____16. Used to adjust volume of remote audio
____17. Selects modes of operation
____18. Used to control gain when AGC is off
____19. Indicates level of audio output
____20. Selects mode for audio level meter
____21. Used to connect headset to USB receiver output
____22. Protects receiver from overload.

PROFESSOR ED SPECS COMMENTS:

Summarizing test results "red flags" weak areas in the instruction for corrective action. One or two students may be wrong, but, if a large number of students miss a test item, either the test item is not valid or it is the instruction that is incorrect.



COMMUNICATIONS ON-LINE SYSTEM SYSTEMS OPERATOR (BASIC)
(J-201-0827)

SCORER DIRECTIONS FOR WRITTEN TEST 2-1-1T BATTERY B

1. Using the attached answer key, mark each incorrect answer on the student's test.

2. A test without error scores 100. Subtract 5 points for each incorrect answer except sample items #1 and #22. Place the score in the upper right hand corner of the student's answer sheet.

3. Record scores on the student's progress record.

4. For students scoring below 90, arrange for remedial instruction and retesting with a different battery of the exam. (Failing twice will place the student before an academic review board).

5. Summarize the test results. This may be done by marking the number of student misses beside each item on a student answer sheet. Any item missed by more than 10 percent of the class should be brought to the attention of the course supervisor for corrective action.

6. Submit the test summary to the course supervisor for review and filing.

7. Retain student answer sheets until the end of the course for back up against administrative error, claims, etc., then destroy. (Answer sheets may be temporarily returned to the student anytime after scoring.)

PROFESSOR ED SPECS COMMENTS:

A blank sheet of paper or different answer sheet may be used in place of this standard answer sheet for up to 50 multiple choice, short answer or matching test items. Note that the answer key is filled in for the preceding matching test.

STANDARD ANSWER SHEET

NAME ANSWER KEY CLASS NO. _____ MARK _____

RATE _____ DATE _____ TEST BOOKLET NO. 2-1-1T Battery B

DIRECTIONS: Block out or "X" out the appropriate letter which corresponds to your choice of the multiple choice items. For completion of matching items, write your answer in the space provided to the right of the letter E.

1.	A B C D E B (example)	26.	A B C D E _____
2.	A B C D E F	27.	A B C D E _____
3.	A B C D E D	28.	A B C D E _____
4.	A B C D E A	29.	A B C D E _____
5.	A B C D E W	30.	A B C D E _____
6.	A B C D E C	31.	A B C D E _____
7.	A B C D E K	32.	A B C D E _____
8.	A B C D E N	33.	A B C D E _____
9.	A B C D E Y	34.	A B C D E _____
10.	A B C D E G	35.	A B C D E _____
11.	A B C D E I	36.	A B C D E _____
12.	A B C D E N	37.	A B C D E _____
13.	A B C D E W	38.	A B C D E _____
14.	A B C D E K	39.	A B C D E _____
15.	A B C D E I	40.	A B C D E _____
16.	A B C D E G	41.	A B C D E _____
17.	A B C D E F	42.	A B C D E _____
18.	A B C D E D	43.	A B C D E _____
19.	A B C D E C	44.	A B C D E _____
20.	A B C D E Y	45.	A B C D E _____
21.	A B C D E A	46.	A B C D E _____
22.	A B C D E B (example)	47.	A B C D E _____
23.	A B C D E _____	48.	A B C D E _____
24.	A B C D E _____	49.	A B C D E _____
25.	A B C D E _____	50.	A B C D E _____

PROFESSOR ED SPECS COMMENTS:

This test provides testing of a number of enabling objectives with standards such as "measured by selecting the correct answer to one of two multiple choice questions." (or 3 or 4 or 4 of 5 or 9 of 10, etc.) Note that the student is given this information in his directions.

DO NOT MARK TEST BOOKLET

COMMUNICATIONS ON-LINE SYSTEMS OPERATOR (BASIC)
(J-201-0827)

WRITTEN TEST 2-4-1T BATTERY A

This test was devised to measure your knowledge of safety precautions, security procedures, and equipments used with communications on-line systems.

DIRECTIONS TO THE STUDENT:

Ensure that you have a three page test booklet and an answer sheet.

On the answer sheet fill in the blanks for name (last name followed by initials), class no., rate, date, test booklet no. and battery.

You will be allowed twenty minutes to complete the test.

If you have any questions just raise your hand. Remain seated and your instructor will come to you.

When you have completed the test, turn it in to your instructor. You may then leave the room.

EXAMPLE: The R-1051B/URR is a

a. patch panel
b. coupler
c. teletypewriter
d. radio receiver

On your answer sheet, you would black out or "X" the letter "d".

In the event that one answer is partially correct and another answer is 100% correct, choose the answer that is 100% correct. Answer all questions on your answer sheet. For a passing grade, the following questions must be correct:

-one of 1 thru 2.
-three of 3 thru 6.
-three of 7 thru 10.
-one of 11 thru 12.

PROFESSOR ED SPECS COMMENTS:

The following test is administered at the end of lesson topic 2.4 and test objectives 2.1.2, 2.2.1, 2.3.1 and 2.4.1.

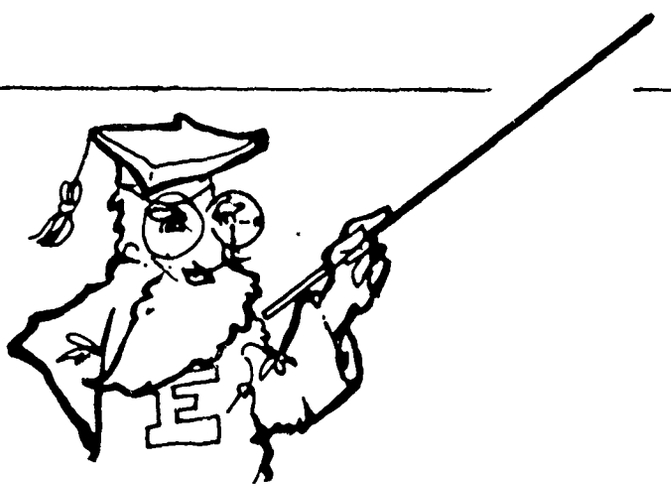
The objective number beside the question is derived as follows:

2.1.1.1
1st test question for objective 2.1.1
objective being tested

This numbering system is especially effective when a bank of test questions are maintained.

Questions 6-12, answer sheet, and scorer directions are not included in this sample in that they basically repeat the previous sample matching test.

The objective being tested is noted beside the test item to provide an audit trail from test items to objectives, and to easily identify objectives on which students perform poorly indicating the instruction and/or the test item needs improvement.



1. When tuning an R-1051(D) for FSK Operation the mode switch must be in what position?

   A. FSK
   B. USB
   C. AM
   D. RATT 2.1.2.2

2. In order to correctly tune the R-1051(D) receiver for the FSK mode of operation, the AGC switch must be in what position?

   A. Tune
   B. Slow
   C. Fast
   D. Standby 2.1.2.3

3. To properly adjust the URA-17, the speed and shift switches must be in what positions respectively?

   A. Slow and Narrow
   B. Fast and Wide
   C. Fast and Narrow
   D. Slow and Wide 2.2.1.1

4. What position must the mode switch be in when setting the receive loop current on an SGC-1?

   A. Transmit
   B. Receive
   C. Standby
   D. BTB 2.2.1.2

5. What position should the mode switch of a CV-2460 be in for simplex and duplex operation respectively?

   A. Standby and BTB
   B. Standby and FDX
   C. FDX and Transmit
   D. BTB and BTB 2.2.1.3

PROFESSOR ED SPECS COMMENTS:

The best and most job related test is the performance test. On the facing page is a performance test for establishing and operating the November Communications System (enabling objective 5.4.1). Note that minimum student cues are given which essentially duplicates the on the job task. An application job sheet is used prior to this test to give the student practice (see job sheet 5-4-1J on page 11-9).

COMMUNICATIONS ON-LINE SYSTEMS OPERATOR COURSE
J-201-0827
PERFORMANCE TEST 5-4-1T
INDIVIDUAL STUDENT NOVEMBER SYSTEM SCORE SHEET

STUDENTS NAME _____ RATE _____ CLASS NO. _____

TIME USED FOR SYSTEM SET-UP (MAX 15 MIN: -2 EACH MIN OVER 10) _____MINS.

FINAL SCORE FOR SYSTEM (100 POINTS MAXIMUM) _____

		IF STEP INCORRECT DEDUCT	YES/NO COMMS
A.	PP-?495/UG DC POWER SUPPLIES		
	1. POWER SWITCHES PLACED IN THE ON POSITION	100	NO
B.	AN/SRA-12B ANTENNA FILTER ASSEMBLY		
	1. ANTENNA SELECTED	100	NO
	2. FILTER SELECTED IN CORRECT FREQUENCY RANGE	100	NO
	3. ANTENNA PATCH SECURELY CONNECTED	100	NO
C.	RF PATCH PANEL		
	1. CORRECT RECEIVER INPUT SELECTED	100	NO
D.	R-1051B/URR H. F. RECEIVER		
	1. CORRECT MODE OF OPERATION SELECTED	5/100	YES/NO
	2. CORRECT FREQUENCY DIALED IN	100	NO
	3. OUTPUT LEVEL ADJUSTED TO ZERO (0) DB	5	YES
E.	R-1051D/URR H. F. RECEIVER		
	1. CORRECT MODE OF OPERATION SELECTED	5/100	YES/NO
	2. CORRECT FREQUENCY DIALED IN	100	NO
	3. AGC SWITCH IN CORRECT POSITION	5	YES
F.	SB-973/SRR AUDIO PATCH PANEL		
	1. CORRECT R-1051 PATCHED TO AN/UCC-1	100	NO
G.	AN/UCC-1 MULTIPLE CHANNEL FSK CONVERTER		
	1. POWER SWITCH TO ON FOR ALL CHANNELS	100	NO
	2. DIVERSITY SWITCH IN APPROPRIATE POSITION	5	YES
	3. BIAS ADJUSTED PROPERLY	5	YES
	4. TONE INPUT IN PROPER POSITION	5/100	YES/NO
H.	SB-1203A/UG BLACK DC PATCH PANEL		
	1. CORRECT EQUIPMENT PATCHED	100	NO
	2. LOOP CURRENT TO 60 MA	5	YES
	3. SAFETY PRECAUTIONS	10	YES

I.	KWR-37/TSEC JASON CRYPTO DEVICE	100	NO
	1. POWER SWITCH IN THE ON POSITION	100	NO
	2. RECEIVER START TIME CLOCK ON CORRECT TIME	100	YES
	3. ALARM SWITCH IN ENABLE POSITION	5	YES
	4. TIME DIFFERENCE SWITCH IN AUTO POSITION	10	YES
	5. SET-START, AND SEARCH BUTTONS USED CORRECTLY	5/100	YES/NO
	6. METER SWITCH PLACED IN OFF POSITION	5/100	YES/NO
J.	KG-14/TSEC CREON CRYPTO DEVICE		
	1. POWER SWITCH IN THE ON POSITION	100	NO
	2. ALARM TEST SWITCH IN OPERATE/SYNC	100	NO
	3. KWR-37 IN SYNC PRIOR TO ATTEMPTING TO SYNC KG-14	100	NO
	4. METER SWITCH IN P/N INPUT OR PRINTER DRIVE	5	YES
K.	SB-1210A/UGQ RED DC PATCH PANEL		
	1. CORRECT EQUIPMENT PATCHED	100	NO
	2. LOOP CURRENT TO 60MA	5	YES
	3. DUMMY PLUG IN PROPER SET JACK	5/100	YES/NO
	4. SAFETY PRECAUTIONS	10	YES
	5. SECURITY VIOLATIONS	10	YES

PROFESSOR ED SPECS COMMENTS:

The test section is done if:

CRITERION TEST CHECKLIST

_____ 1. Test item(s) match the objectives, conditions and behaviors.

_____ 2. Adequate number of test item(s) for each objective.

_____ 3. Testing provides comprehensive coverage of terminal and enabling objectives.

_____ 4. Adequate instructions to student provided.

_____ 5. Instructions to scorer including answer keys provided.

_____ 6. Alternate test series of same difficulty provided for written tests.

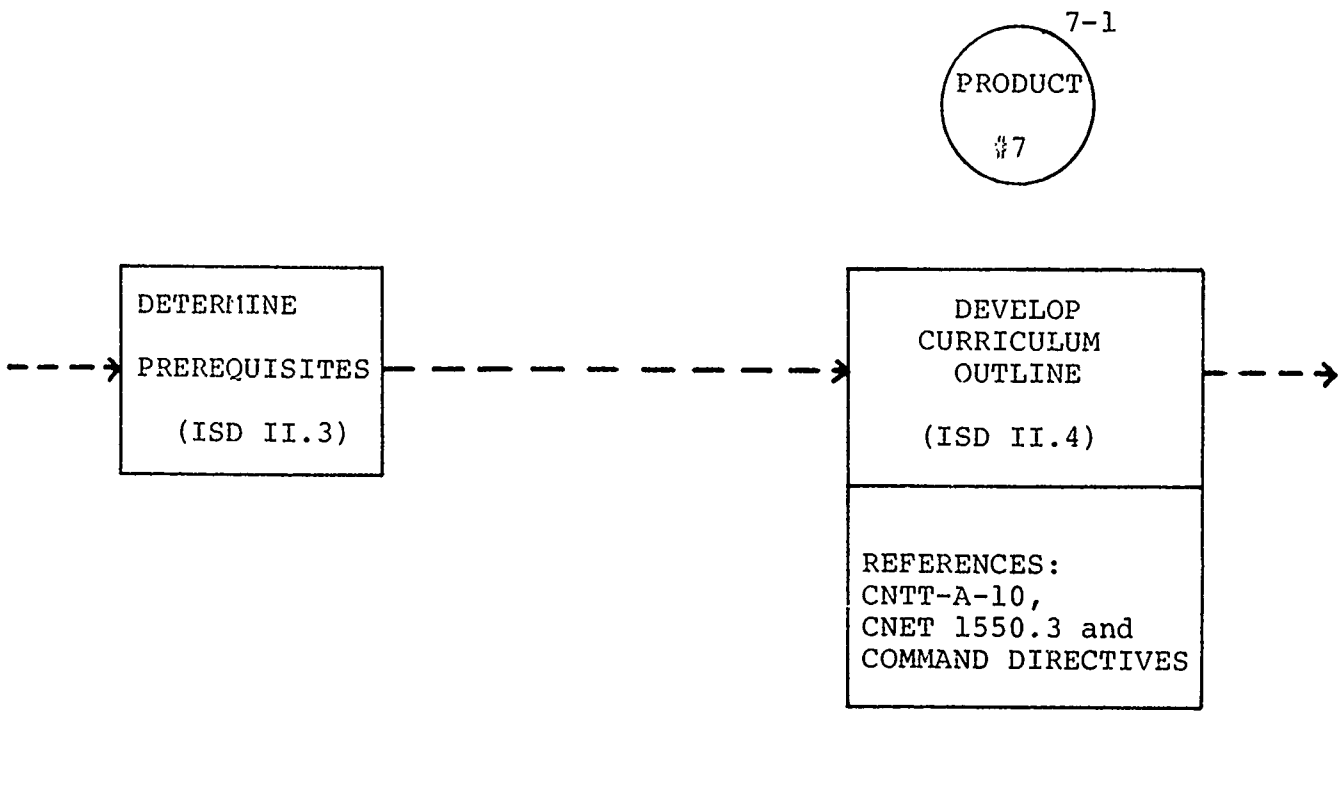
_____ 7. Each test item has indication of which objective(s) it is testing.

_____ 8. Tests present a neat, organized appearance with correct spelling and grammar.

_____ 9. Re-training and re-testing plans are formulated and available to student.

_____ 10. Objectives revised if required.

_____ 11. POA&M signed off for item.



SAMPLE

CURRICULUM

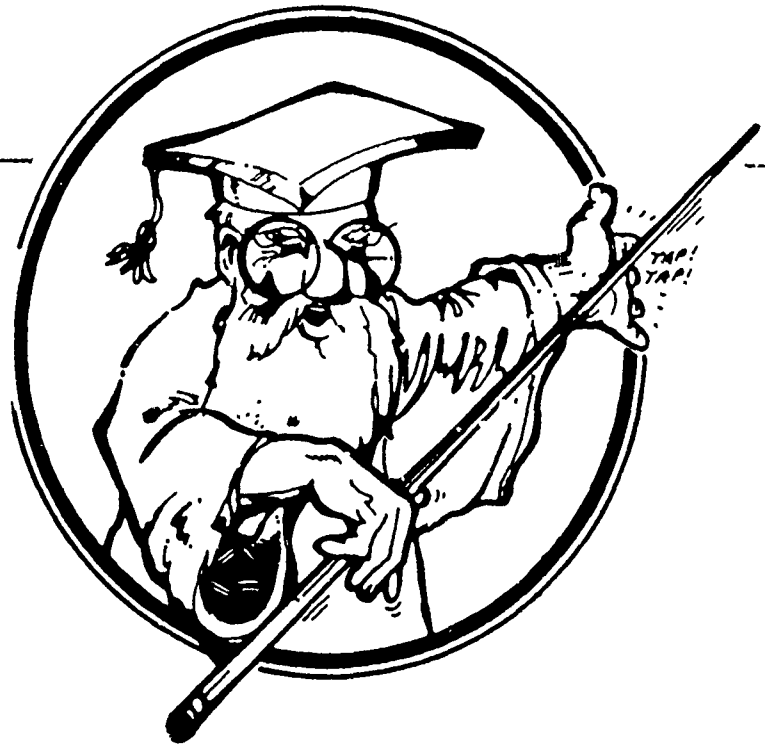
OUTLINE *

*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

8779P7

PROFESSOR ED SPECS COMMENTS:

The cover of the curriculum outline (facing page) provides a minimum description of the course. More complete information is provided on the following cover page and subsequent pages.



CURRICULUM OUTLINE

FOR

COMMUNICATIONS ON-LINE SYSTEMS OPERATOR (BASIC)

PREPARED BY

FLEET TRAINING CENTER

NORFOLK, VIRGINIA 23511

J-201-0827

PREPARED FOR

COMMANDER TRAINING COMMAND, U. S. ATLANTIC FLEET

30 SEPTEMBER 1975

PROFESSOR ED SPECS COMMENTS:

While the format of the curriculum documents illustrated by this sample package is based on that format established by CNTT-A10, you will probably notice that there are some subtle distinctions. Most of these differences are typographical in nature (underlining, "boxing" of titles, etc.) and do not violate the spirit and intent of A10 in any way. The purpose of these changes is to make the documents more readable and, thus, more usable. Other changes involve the addition (never deletion) of some bits of information not provided for in the A10 format but required by other directives such as CNETINST 1560.2B.

At the time of preparation of the curriculum outline, the Approval/Implementation Date (Item 10 on the Cover Page) may not be known. If such is the case, the school should enter an estimated date.

COVER PAGE

1. Course Title:

   COMMUNICATIONS ON-LINE SYSTEMS OPERATOR (BASIC)

2. Course Length:

   48 Contact Hours
   8 Days

3. Locations at Which Taught:

   FLEET TRAINING CENTER, NORFOLK, VA
   FLEET TRAINING CENTER, MAYPORT, FL
   FLEET & MINE WARFARE TRAINING CENTER, CHARLESTON, SC

4. Class Capacity:

	Norfolk	Mayport	Charleston
Normal	14	10	10
Maximum	14	10	10
Minimum	4	4	4

5. Instructors Required Per Class Based on Planned Weekly Input:

   2 RM1 or above

6. Activity Preparing Curriculum Outline:

   FLEET TRAINING CENTER, NORFOLK, VA 23511

7. Command Exercising Curriculum Control:

   COMMANDER TRAINING COMMAND, U. S. ATLANTIC FLEET, NORFOLK, VA

8. Quota Management Authority:

   COMMANDER TRAINING COMMAND, U. S. ATLANTIC FLEET, NORFOLK VA

9. Quota Control:

   QUOTA CONTROL, FLEET TRAINING CENTER, NORFOLK, VA
   TRAINING OFFICER, FLEET TRAINING CENTER, MAYPORT, FL
   QUOTA CONTROL, FLEET & MINE WARFARE TRAINING CENTER, CHARLESTON, SC

10. Approval/Implementation Date:

    1 December 1975

PROFESSOR ED SPECS COMMENTS:

It's worth noting that while this sample curriculum outline is reproduced only on one side of each sheet, your curriculum should be run back-to-back, head-to-head, in the interest of conserving paper and reducing the weight of the document, with the exception of the Cover Page, each Unit objectives page, and the title pages for Annex I and Annex II, which should always be on a right-hand page. If you follow this procedure, you may have a few blank left-hand pages. If so, number such pages (except the one facing the Cover Page) in their normal sequence and center the following (with parentheses) on the page:

(This page was left blank intentionally.)

FOREWORD

This document was prepared for submission to higher authority for approval. This curriculum outline serves as a planning document for development of specific training materials to be used to conduct the course of instruction. It is in outline form, listing course units and lesson topics in their sequential order with accompanying learning objectives, both terminal and enabling. The outline is used to organize the course of instruction for Communications On-Line Systems Operator (Basic) and to ensure that all required subject matter is adequately covered in the course. This Curriculum Outline consists of Front Matter, the Outline of Instruction and Annexes.

Task analysis for this course was provided primarily by Personnel Qualification Standards (PQS) books; NAVEDTRA 43196-7A, NAVTRA 43196-6, NAVTRA 43196-4, NAVTRA 43194-1, NAVTRA 43193-2 and NAVEDTRA 43190-6A. Additional tasks for operating crypto equipment and operating communications equipment as a total system were added by subject matter experts during the analysis phase of developing the course.

PROFESSOR ED SPECS COMMENTS:

By the way, while the Communications On-Line Systems Operator (Basic) Course serves as the basis for our sample, this publication is not complete for use in that course. In fact, some of the information contained herein relative to that course was "created" specifically for this sample in order to illustrate all facets of format.

NOTE ON DISTRIBUTION of final, approved curriculum outline:

-Curriculum Control Authority (CCA) receives 2 copies.
-Other functional commanders (except CNATRA) receive 1 copy (COMTRALANTINST 1550.4 refers)
-Command with technical audit responsibility receives 1 copy(COMTRALANTINST 1550.4 refers)
-CNETS (Code N-36) receives 1 copy (CNETINST 1560.2B refers)
-Participating training activities receive sufficient copies to satisfy their requirements (COMTRALANTINST 1550.4 and CNETINST 5600.1 para. 7 refer)

DISTRIBUTION

Activity	No. of Copies
COMTRALANT	2
CNTECHTRA	1
COMTRAPAC	1
NAVELEX	1
CNETS (Code N-36)	1
FLETRACEN Norfolk, VA	10
FLEMINEWARTRACEN Charleston, SC	2
FLETRACEN Mayport, FL	2

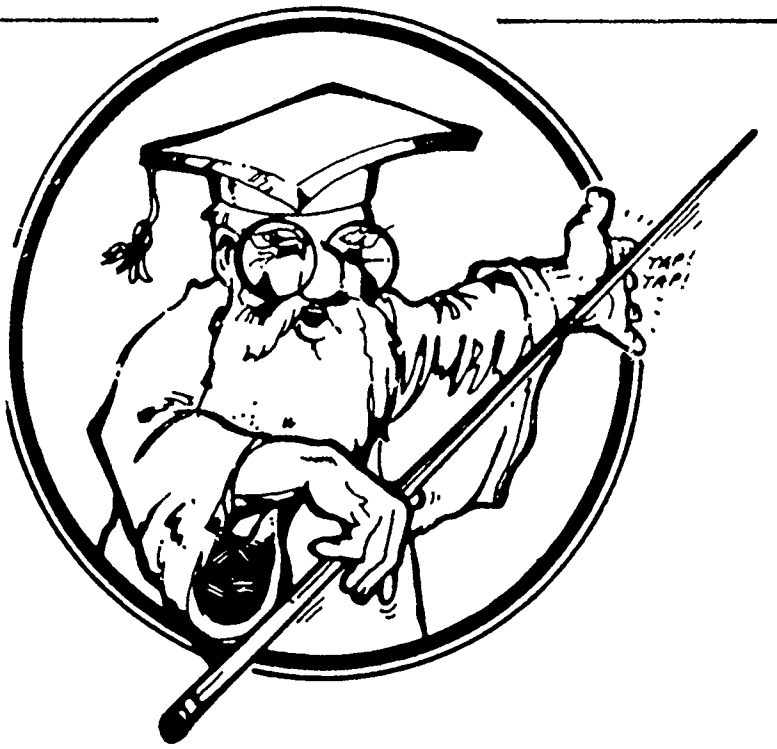
COURSE NO. J-201-0827

RECORD OF CHANGES

NO.	ACTIVITY	SUBSTANCE	ENTERED BY	DATE

PROFESSOR ED SPECS COMMENTS:

The Letter of Promulgation is prepared by the approving functional command (either COMTRALANT or CNTECHTRA for our courses). In preparing your curriculum outline, you should allow for a page v, where this letter will ultimately be located. Some Training Program Coordinators do not provide a letter of promulgation. In these instances the information contained in the Letter of Promulgation is added to the FOREWORD (page ii) or a separate letter and the approving officer signs that page. Whatever the means of approval, it should be inserted as in the curriculum outline.



DEPARTMENT OF THE NAVY
FLEET TRAINING CENTER
NORFOLK, VIRGINIA 23511

7-13

FF8-2/N3A:slp
1550/2

LETTER OF PROMULGATION

1. Curriculum outline for Communications On-Line Systems Operator (Basic) Course (J-201-0827) is the approved curriculum that prescribes the minimum material to be taught in the course.

2. Commands are invited to submit comments and recommendations on the content of this course to Commanding Officer, Fleet Training Center, Norfolk, Virginia 23511, with a copy to Commander Training Command, U. S. Atlantic Fleet, Norfolk, Virginia 23511.

M. F. DURKIN
Chief of Staff

0371P8

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TABLE OF CONTENTS

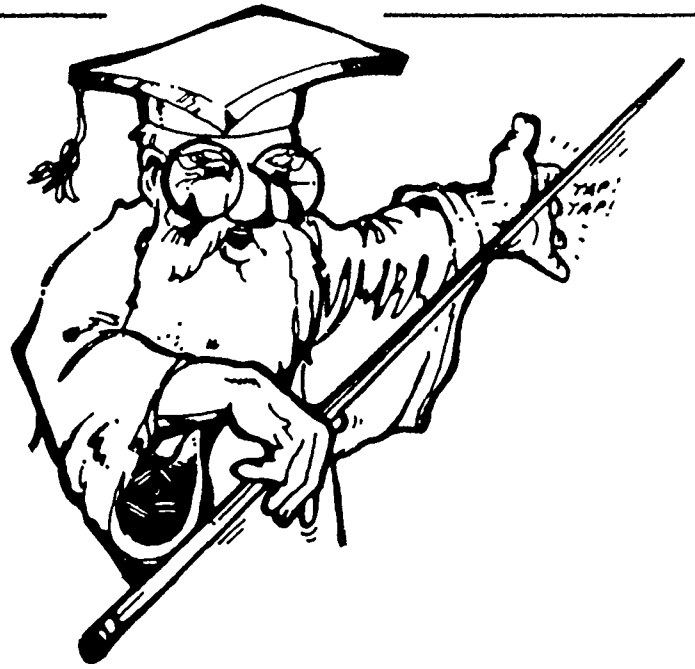
PROFESSOR ED SPECS COMMENTS:

As the designer of the course, you may elect not to include a lesson topic for critique and checkout such as is provided in this sample (Lesson Topic 6.4), since this is an administrative function and not directly a job-relevant part of the course's subject matter.

PROFESSOR ED SPECS COMMENTS:

Item 2 on the Course Data Page refers to physical characteristics required of students designated for enrollment in the course, e.g., "Must have passed appropriate test for colorblindness." Most courses in this command have no special physical requirements, in which cases the word "None" suffices, as in this sample.

The course data page requirements are drawn from CNTT-A10 and CNETINST 1560.2B.



COURSE DATA PAGE

1. Course Mission:

The Communications On-Line Systems Operator (Basic) Course is designed to train ET, RM and CT (strikers and above), to establish and operate six on-line communications systems; the Bravo, Charlie, Delta, Golf, Kilo and November systems. Establishment of systems includes configuring and operating the KW37 (JASON), KG14 (CREON) and KW7 (ORESTES) crypto devices, R-1051 receivers, multiplexing equipment, keyers and converters, teletype terminal equipments and associated ancillary equipments without supervision under all shipboard readiness conditions.

2. Personnel Physical Requirements:

None

3. Security Clearance Required:

Final Secret

4. Prerequisite Training:

AN/WRC-1 Family transmitters or AN/WRT-2 Transmitter Operator Course or have a thorough knowledge of the operation of one of these transmitters.

5. Personnel and Ratings Eligible:

ET, RM, CT Third Class and above

6. Obligated Service:

18 months

7. NOBC/NEC Earned:

None

8. Related and/or Follow-on Training:

Communications Quality Monitoring and Control, J-201-0020

9. Modules Specified for the Rating:

Not applicable.

10. Primary Instructional Methods:

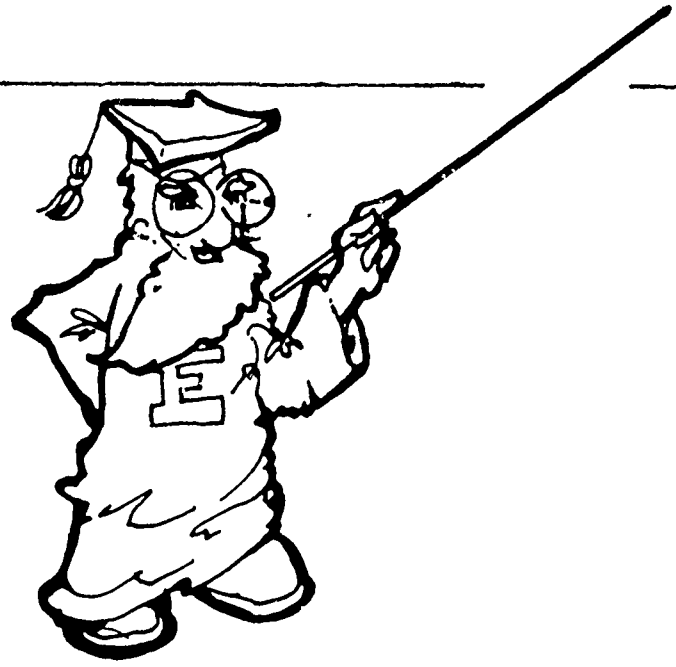
Lecture/Laboratory

11. Identification Data on Preceding Curriculum Outline:

Communications On-Line Systems Operator (Basic), J-201-8272, November 1973

PROFESSOR ED SPECS COMMENTS:

Item 13 is included in accordance with FLETRACEN INSTRUCTION 3500.3 (series). The lead-in statement and the closing paragraph shown in this example are standard statements. If PQS does not apply to your particular curriculum, simply put "Not Applicable" after the heading for Item 13.



12. Instruments and Procedures Used for Measuring Student Performance:

Kinds: Block Diagram Drawings and Performance Tests

Frequency: Drawings - Six
Performance - Six

Length: Drawings - 10 minutes each
Performance - 30 minutes each

Other Measuring Instruments: Job Sheets, Matching Tests, Multiple Choice Tests

13. Personnel Qualification Standards (PQS):

The learning objectives contained in the following PQS systems are considered to be adequately covered in the curriculum:

a. R-1051 Receiver (NAVTRA 43190-6A)

Theory	108	.12, .21 thru .23, .71 thru .73
Systems	201	.21, .51, .52
	202	.23, .25, .38 thru .217, .219, .6As
Watchstation	301	.11 thru .14, .21, .26, .33, .43

b. AN/URA-17 Converter/Comparator (NAVTRA 43193-2)

Theory	106	.12, .21, .22, .71 thru .73
Systems	201	.21 thru .28
Watchstation	301	.11 thru .14, .21, .22, .43

c. AN/UGC-6 Teletype (NAVTRA 43194-1)

Theory	103	.11 thru .13, .21 thru .23, .51 thru .53
Watchstation	301	.11, .14, .15, .112, .45 thru .47

d. AN/UCC-1C, D(V) Converter/Comparator (NAVTRA 43196-7)

Theory	107	.11, .12, .21 thru .23, .71 thru .73
Systems	203	.21, .22
	207	.21, .25 thru .27
Watchstation	301.	.11 thru .14, .18, .21 thru .26, .32, .44

e. AN/SGC-1A Converter (NAVTRA 43196-4)

Theory	105	.71 thru .73
System	201	.21 thru .213, .7a
Watchstation	301	.11 thru .15, .21, .22

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f. Auxiliary Equipment (NAVTRA 43196-6)

Theory	105	.11, .12, .21 thru .210, .31, .32 .71 thru .73
Systems	201	.21 thru .26
	203	.21
	204	.21
Watchstation	301	.11 thru .19, .21, .22, .41 thru .46

Satisfactory completion of this course should not be construed as qualification in the system taught. Selected PQS items may be signed off at the discretion of the school; however, in all cases the responsibility for final qualification of an individual with respect to proficiency on the equipment or system as it applies to a particular ship rests with the Commanding Officer. It is recommended that individual Commanding Officers consider satisfactory completion of the course as contributing toward making qualification decisions.

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OUTLINE

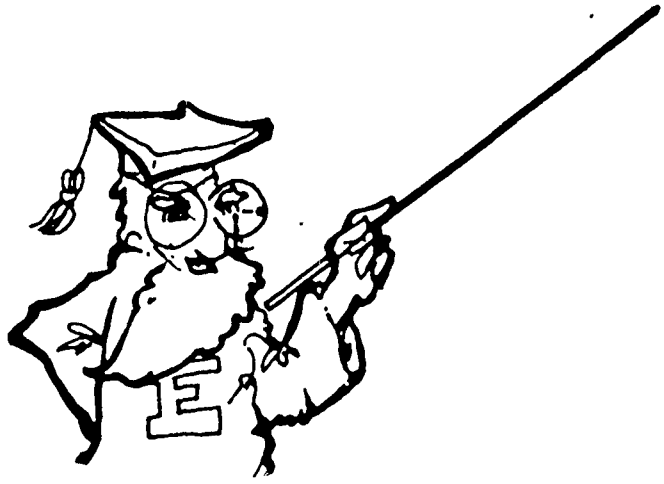
OF

INSTRUCTION

PROFESSOR ED SPECS COMMENTS:

A comment on terminal objective 1.0: While an objective on the introduction to and familiarization with the command, school, and course (See 1.1.1 on page 3) is "terminal" in terms of the course itself, it is not a pure terminal objective since it doesn't relate to on-the-job behavior (CNTT-A10, p. 2-31). We would, then, label such an objective "Enabling" and list it where it would normally appear, in Lesson Topic 1.1.

The format for unit pages and lesson topic guide pages in the curriculum outline are drawn from CNTT-A10, pages 3-20 thru 3-24.



A comment on partially supported objectives: It is desirable to have terminal and enabling objectives complete within a lesson topic or at least within a unit. However, in some cases as in this sample a large portion of the early material is tested and retested continually in subsequent units and lesson topics. Rather than give a written test in unit one on safety, security and emissions, the choice was made to use a performance standard applied later in the course. Thus, the objectives are only partially supported in unit 1.0.

UNIT 1.0 INTRODUCTION TO COMMUNICATIONS

Contact Hours Allotted this Unit:

Classroom	Laboratory
3.4 Hours	0.0 Hours

TERMINAL OBJECTIVES

Supported Entirely by this Unit:

1.0 None. (There is no terminal objective for Lesson Topic 1.1, Introduction to School and Course.)

Supported Partially by this Unit and Partially by Units 5.0 and 6.0:

When you complete this course, you will be able to:

2.0 APPLY electrical safety precautions and practices as established by pertinent publications while working with electronic equipment when given a shipboard communications space with applicable equipments, tools and publications.

3.0 APPLY at all times all security and TEMPEST measures to the maximum extent allowable by physical restrictions and in accordance with OPNAVINST 5510.1E and KAG1 when given a communications space with applicable equipments and publications.

Supported Partially by this Unit and Partially by Units 2.0 thru 6.0:

When you complete this course you will be able to:

4.0 RECOGNIZE the types of emissions required for a specific communications system and TUNE commonly used transmitters and receivers to achieve the desired communications when given a shipboard communications space with applicable equipments and publications.

PROFESSOR ED SPECS COMMENTS:

Since some lesson topics, such as introduction to the command, introduction to the course and examination and critique, do not relate directly to the student's anticipated on-the-job behavior, we would not normally have terminal objectives. RATIONALE: The sole function of these lesson topics is to ENABLE the student to complete the course or outline military functions while at the school. Lesson Topic 1.1 is an example.

Enabling Objective 1.1.1 is technically partially supported by every lesson topic in the course, however, to list this objective on every lesson topic page is administratively cumbersome and unproductive so it is listed as entirely supported by this lesson topic.

(PQS Tasks: NONE) This note following the enabling objective provides an audit trail back to the task analysis on which the objectives are based. In this case the objective is administrative only in nature and is not based on any task analysis tasks.

LESSON TOPIC 1.1 INTRODUCTION TO SCHOOL AND COURSE

Contact Hours Allotted this Lesson Topic:

Classroom	Laboratory
0.8 Hours	0.0 Hours

TERMINAL OBJECTIVES:

Supported Entirely by this Lesson Topic: NONE

Supported Partially by this Lesson Topic: NONE

ENABLING OBJECTIVES:

Supported Entirely by this Lesson Topic:

When you complete this lesson topic, you will be able to:

1.1.1 COMPLY with regulations and chain of command organization for the school, command, and station, and UTILIZE pertinent facilities therein as required. Satisfactory performance will be measured by regular attendance in class and laboratory and compliance with all rules and regulations. (PQS Tasks: NONE)

Supported Partially by this Lesson Topic: NONE

PROFESSOR ED SPECS COMMENTS:

SAMPLE BREAKDOWN OF AN OBJECTIVE (1.2.1)

BEHAVIOR	CONDITION	STANDARDS
APPLY electrical safety precautions.	...when given performance tests using electronic equipment.	Achievement of this objective will be measured by 100 percent compliance with safety precaution checklist items during performance tests for this course.

Note the large number of PQS tasks from the task analysis accomplished by this one objective. The number of tasks is somewhat misleading since most of the tasks are repetitive in the different PQS books but all should still be listed.

Note on task analysis: After enabling objectives, the task analysis item or items which are the basis for the objective should be sited. In this case, a large number of PQS tasks are cited.

LESSON TOPIC 1.2 INTRODUCTION TO ELECTRICAL SAFETY

Contact Hours Allotted this Lesson Topic:

Classroom	Laboratory
0.8 Hours	0.0 Hours

TERMINAL OBJECTIVES:

Supported Entirely by this Lesson Topic: NONE

Supported Partially by this Lesson Topic and Partially by Lesson Topics 5.1 thru 6.4.

When you complete this course, you will be able to:

2.0 APPLY electrical safety precautions and practices as established by pertinent publications while working with electronic equipment when given a shipboard communications space with applicable equipments and publications.

ENABLING OBJECTIVES:

Supported Entirely by this Lesson Topic: NONE

Supported Partially by this Lesson Topic and Partially by Lesson Topics 5.1 through 6.4.

When you complete this course, you will be able to:

1.2.1 APPLY electrical safety precautions when given performance tests using electronic equipment. Achievement of this objective will be measured by 100 percent compliance with safety precaution checklist items during performance tests for this course lAW section 2 of EIMB NAVSEA 0967-LP-000-0100. (PQS tasks: (NAVTRA 43190-6A) 108.12, .21 thru .23, .71 thru .73; (NAVTRA 43193-2) 106.12, .21, .22, .71 thru .73; (NAVTRA 43194-1) 103.11 thru .13, .21 thru .23, .51 thru .53; (NAVTRA 43196-7) 107.11, .12, .21 thru .23, .71 thru .73; (NAVTRA 43196-4) 105.71 thru .73; (NAVTRA 43196-6) 105.11, .12, .21 thru .210, .31, .32, .71 thru .73)

PROFESSOR ED SPECS COMMENTS:

In-depth guidance on the writing of objectives is provided by Volume II of the ISD Manual: NAVEDTRA 106A, Interservice Procedures for Instructional Systems Development. Three key points to keep in mind when preparing objectives are quoted directly from Volume II as follows:

> 1. In some cases, the terminal learning objectives will represent the behavior accurately, but will not require the ultimate level of proficiency that is required on the job. (p. 3)
>
> 2. ...objectives will specify what the learner will accomplish as a result of having received the instruction, and will specify to the instructional designer the exact behaviors the instruction is expected to produce. (p. 4) (underlining added)
>
> 3. Prior to designing instruction to train individuals to perform tasks, it is necessary to translate the tasks into terminal learning objectives to be attained during training. (p. 4) (underlining added)

It is evident, then, from the foregoing from NAVEDTRA 106A that terminal objectives should be based on job behaviors and written to conform to them when they can be measured in the course. Such is the case with the terminal objectives for this sample course: Opportunity for the performance of the actual job behaviors can be adequately duplicated in the course, and the terminal objectives are written accordingly. On the contrary, when the job behaviors cannot be directly measured in the course, the terminal objectives should be written in such a manner that they (the objectives) are measurable in the course. This means that the best a course designer can do sometimes is to write terminal objectives with course-related behaviors, conditions, and standards. Serious consideration should be given, however, to devising ways of measuring actual on-the-job behaviors before following the latter approach.

LESSON TOPIC 1.3 INTRODUCTION TO SECURITY AND TEMPEST

Contact Hours Allotted this Lesson Topic:

Classroom	Laboratory
0.8 Hours	0.0 Hours

TERMINAL OBJECTIVES:

Supported Entirely by this Lesson Topic: NONE

Supported Partially by this Lesson Topic and Partially by Lesson Topics 3.1 thru 3.3 and 5.1 thru 6.4.

When the student completes this course he will be able to:

3.0 APPLY at all times all security and TEMPEST measures to the maximum extent allowable by physical restrictions and in accordance with OPNAVINST 5510.1E and KAG 1 when given a communications space with applicable equipments and publications.

ENABLING OBJECTIVES:

Supported Entirely by this Lesson Topic: None

Supported Partially by this Lesson Topic and Partially by Lesson Topics 3.1 thru 3.3 and 5.1 thru 6.4.

When you complete this course, you will be able to:

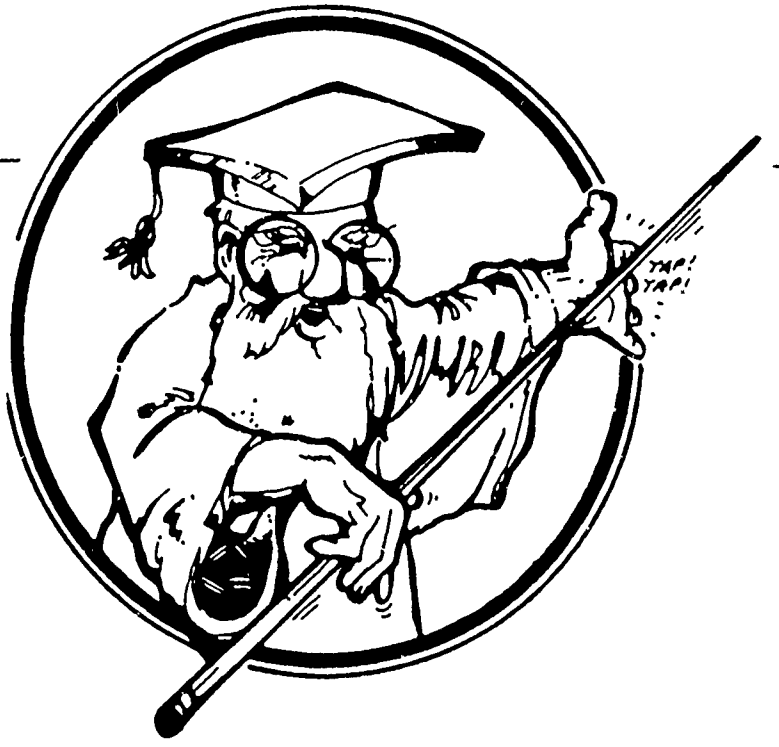
1.3.1 Given security information and materials, APPLY classified materials security and TEMPEST regulations in accordance with OPNAVINST 5510.1E and KAG 1. Satisfactory performance will be measured by receipting, page checking, storing, using and returning classified publications and equipment in accordance with OPNAVINST 5510.1E and KAG 1. (PQS tasks: NONE Job analysis task 3.0).

PROFESSOR ED SPECS COMMENTS:

Sequencing of material. This sample course was organized and sequenced as follows: (1) Introduction to school, electrical safety precautions, security and TEMPEST and emissions; (2) Introduction to receivers, keyer-converters, switchboards and patch panels; (3) Introduction to crypto devices; (4) Introduction to communications systems; (5) Application of communications systems and (6) Performance tests. Since most of the objectives require performance testing in a total communication system, they are partially supported when the knowledge is presented and partially supported during practical and performance testing units. This sequencing procedure requires considerable overlap of units and lesson topics but is very efficient from a student's learning point of view.

An alternate sequencing procedure might be to first teach and test one entire communications system (e.g., NOVEMBER system) and then teach the other systems, one at a time, as a variety of the NOVEMBER system.

Objective Numbering. Note that objectives brought forth from previous units and lesson topics retain their same numbers and are word for word the same as when first stated.



UNIT 2.0 INTRODUCTION TO ASSOCIATED EQUIPMENTS

Contact Hours Allotted this Unit:

Classroom	Laboratory
6.7 Hours	0.0 Hours

TERMINAL OBJECTIVES:

Supported Entirely by this Unit: NONE

Supported Partially by this Unit and Partially by Units 2.0 thru 6.0:

When you complete this course you will be able to:

4.0 Correctly RECOGNIZE the types of emissions required for a specific communications system and TUNE commonly used transmitters and receivers to achieve the desired communications when given a shipboard communications space with applicable equipments and publications.

Supported Partially by this Unit and Partially by Units 4.0 thru 6.0.

5.0 Given a shipboard communications space containing a R-1051/URR (series) operational receiver, associated equipment and publications, any specific emission designator, an incoming signal for the emission and no supervision; the student will be able to ACTIVATE and TUNE the receiver to provide a signal in the correct mode and of sufficient strength to establish a communications system in less than fifteen minutes lAW Communication Technician's Handbook, NAVELEX 0967-LP-206-2020.

6.0 Given a shipboard communications space containing commonly used keyers and converters, the communications system to be established, associated equipment and publications and no supervision, the student will be able to SELECT and ADJUST the correct keyer and/or converter to establish the communications system in less than fifteen minutes lAW Communication Technician's Handbook, NAVELEX 0967-LP-206-2020.

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7.0 Given a shipboard communications space containing the SRA12 electronic filter assembly; the SB-973/SSR, SB-863/SRT and SB-988/SRT transfer panels; associated equipment and publications; the communications system to be establisehd and no supervision; the student will be able to SELECT the proper assemblies and switchboards and INTER-CONNECT equipments to establish the communications systems in less than fifteen minutes 1AW Communication Technician's Handbook, NAVELEX 0967-LP-206-2020.

8.0 Given a shipboard communications space containing the SB-1203/UG and SB-1210/UGQ direct current patch panels associated equipment and publications, the communications system and/or configuration to be established, associated equipment and publications, and no supervision; the student will be able to SELECT the proper patch panel and INTERCONNECT equipments to establish the communications system in less than 15 minutes 1AW Communication Security Policy and Procedures (c) (NOFORN), KAG-1TSEC.

PROFESSOR ED SPECS COMMENTS:

TERMINAL OBJECTIVE 5.0. Note that this objective is exactly the same as it appears on the preceding unit page with the same number and the same words. The developer will probably find "cut and paste" a useful shortcut for material that is repeated.

ENABLING OBJECTIVES 2.1.1 and 2.1.2. These two objectives may be tested separately or jointly. (See sample tests beginning on page 6-7). It might be argued that, for Enabling Objective 2.1.2, one out of two questions is too low a standard. However, bear in mind that:

- -Any student failing to meet this objective must be provided with remedial instruction and retesting.
- -A student failing twice must be referred to the academic review board.
- -There are a large number of equipments being taught as components of communications systems and having more questions on each equipment may be unnecessary to the end product of being able to establish and operate the various communications systems.
- -Terminal Objective 5.0 is only partially supported by these two enabling objectives. The final testing of Terminal Objective 5.0 comes later in the course.
- -The validation phase of course development (piloting) showed that students had very little problem with operating the R-1051 receivers.

Be that as it may, the developer must decide on the standard of performance required to meet the objective. He could easily have used a standard of two out of three questions (66 2/3 percent criteria) or three out of four questions (75 percent criteria).

On Enabling Objectives partially supported. It would also be correct to include an enabling objective partially supported by this lesson topic for ACTIVATING and TUNING the receiver. However, since this is implied by the partially supported terminal objective, the enabling objective is not required.

LESSON TOPIC 2.1 INTRODUCTION TO RADIO RECEIVERS

Contact Hours Allotted this Lesson Topic:

Classroom	Laboratory
0.8 Hours	0.0 Hours

TERMINAL OBJECTIVES:

Supported Entirely by this Lesson Topic: NONE

Supported Partially by this Lesson Topic and Partially by Lesson Topics 4.0 thru 6.0.

5.0 Given a shipboard communications space containing a R-1051/URR (series) operational receiver, associated equipment and publications, any specific emission designator an incoming signal for the emission and no supervision; the student will be able to ACTIVATE and TUNE the receiver to provide a signal in the correct mode and of sufficient strength to establish a communications system in less than fifteen minutes lAW Communication Technician's Handbook, NAVELEX 0967-LP-206-2020.

ENABLING OBJECTIVES:

Supported Entirely by this Lesson Topic:

When you complete this lesson topic, you will be able to:

2.1.1 Given a front panel diagram of a R-1051/URR radio receiver, a list of names and a list of functions, MATCH each frequently used front panel control with its name and function to a 90 percent criteria from memory lAW with Technical Manual Radio Receiver R-1051B/URR, NAVSHIPS 0967-LP-970-9018. (PQS tasks: NAVEDTRA 43190-6A - 202.22A and B, 202.25A and B, 202.38A and B thru 202.217A and B, 202.219A and B).

2.1.2 Given the type of operation desired from the R1041/URR (series) receiver and the series designator of the receiver, SELECT the correct position of the various control knobs and switches. Satisfactory performance will be measured by selecting the correct answer to one of two multiple choice questions from memory lAW Communication Technician's Handbook, NAVELEX 0967-LP-206-2020. (PQS tasks: NAVEDTRA 43190-6A - 202.25D, 301.13A thru C).

Supported Partially by this Lesson Topic: NONE

PROFESSOR ED SPEC COMMENTS:

With the aim of achieving uniformity throughout the Fleet Training Center when recording time allocations (see "Contact Hours Allotted this Lesson Topic" on each lesson topic page in this sample curriculum outline), the following chart has been devised for use when converting actual minutes to their hourly decimal equivalent.

IF TIME SPAN IS...	DECIMAL EQUIVALENT IS...
1-9 minutes	.1
10-15 minutes	.2
16-21 minutes	.3
22-27 minutes	.4
28-33 minutes	.5
34-39 minutes	.6
40-45 minutes	.7
46-51 minutes	.8
52-57 minutes	.9
57-60 minutes	1.0

One advantage in using the decimal equivalent to record allocated time is that some flexibility in scheduling is provided. The decimal .2 would permit anywhere from 10 to 15 minutes of instruction. So, a lesson topic which takes approximately one hour and fifteen minutes to cover would have its time allocation expressed thusly: 1.2.

LESSON TOPIC 2.2 INTRODUCTION TO KEYERS AND CONVERTERS

Contact Hours Allotted this Lesson Topic:

Classroom	Laboratory
5.0 Hours	0.0 Hours

TERMINAL OBJECTIVES:

Supported Entirely by this Lesson Topic: NONE

Supported Partially by this Lesson Topic and Partially by Units 4.0 thru 6.0.

6.0 Given a shipboard communications space containing commonly used keyers and converters, the communications system to be established, associated equipment and publications and no supervision, the student will be able to SELECT and ADJUST the correct keyer and/or converter to establish the communications system in less than fifteen minutes lAW Communication Technician's Handbook, NAVELEX 0967-LP-206-2020.

ENABLING OBJECTIVES:

Supported Entirely by this Lesson Topic:

When you complete this lesson topic, you will be able to:

2.2.1 Given the name of a commonly used keyer or converter (URA-17, SGC-1, CV2460, UCC-1) and the operation to be performed, SELECT the correct position of the various control knobs and switches. Satisfactory performance will be measured by selecting the correct answer to three of four multiple choice questions from memory lAW Communication Technician's Handbook, NAVELEX 0967-LP-206-2020. (PQS tasks: NAVTRA 43193-2 - 201.21 thru .28; NAVTRA 43196-4 - 201.21 thru .213; NAVEDTRA 43196-7A - 203.21, .22, 207.21, .25 thru .27)

Supported Partially by this Lesson Topic: NONE

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LESSON TOPIC 2.3 INTRODUCTION TO TRANSMITTER AND RECEIVER TRANSFER PANELS AND SWITCHBOARDS

Contact Hours Allotted this Lesson Topic:

Classroom	Laboratory
0.5 Hours	0.0 Hours

TERMINAL OBJECTIVES:

Supported Entirely by this Lesson Topic: NONE

Supported Partially by this Lesson Topic and Partially by Units 4.0 thru 6.0.

7.0 Given a shipboard communications space containing the SRA-12 electronic filter assembly; the SB-973/SRR, SB-863/SRT and SB-988/SRT transfer panels; associated equipment and publications, the communications system to be established and no supervision; the student will be able to SELECT the proper assemblies and switchboards and INTERCONNECT equipments to establish the communications system in less than fifteen minutes lAW Communication Technician's Handbook, NAVELEX 0967-LP-206-2020.

ENABLING OBJECTIVES:

Supported Entirely by this Lesson Topic:

When you complete this lesson topic, you will be able to:

2.3.1 Given a situation requiring interconnecting communications equipments using one or more filter assemblies or transfer panels (SRA-12, SB-973, SB-963 and SB-988), SELECT the applicable transfer panel or panels and/or filter assembly. Satisfactory performance will be measured by selecting the correct answer to three out of four multiple choice questions from memory lAW Communication Technician's Handbook, NAVELEX 0967-LP-206-2020. (PQS tasks: NAVTRA 43196-6 - 203.21, 204.21).

Supported Partially by this Lesson Topic: NONE

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LESSON TOPIC 2.4 INTRODUCTION TO D.C. PATCH PANELS

Contact Hours Allotted this Lesson Topic

Classroom	Laboratory
0.3 Hours	0.0 Hours

TERMINAL OBJECTIVES:

Supported Entirely by this Lesson Topic: NONE

Supported Partially by this Lesson Topic and Partially by Units 4.0 thru 6.0.

8.0 Given a shipboard communications space containing the SB-1203/UG and SB-1210/UGQ direct current patch panels, associated equipment and publications, the communications system and/or configuration to be establisehd, associated equipment and publications, and no supervision; the student will be able to SELECT the proper patch panel and INTERCONNECT equipments to establish the communications system in less than fifteen minutes lAW Communications Security Policy and Procedures (c) (NOFORN), KAG 1/TSEC.

ENABLING OBJECTIVES:

Supported Entirely by this Lesson Topic:

When you complete this lesson topic, you will be able to:

2.4.1 Given the name of a DC patch panel (SB-1203 or SB 1210) and a list of paired communication equipments, SELECT the pair or pairs of equipments that may be correctly interconnected by the patch panel. Satisfactory performance will be measured by correctly answering one out of two multiple choice questions from memory lAW Communications Security Policy and Procedures (c) (NOFORN), KAG 1/TSEC. (PQS tasks: NAVTRA 43196-6 - 201.21 thru .26).

Supported Partially by this Lesson Topic: NONE

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ANNEX I

EQUIPMENT

REQUIREMENTS

LIST

PROFESSOR ED SPECS COMMENTS:

Equipment is referred to and defined as "Training Equipment" in OPNAVINST 1500.39 (q.v.) accordingly: "Equipment designed for operational purposes which is the subject of instruction...and which has or had as its prime or initial purpose for existence some function other than that of training personnel."

ANNEX I - EQUIPMENT

TYPE DESIGNATOR	NOMENCLATURE	NATIONAL STOCK NR.	QUANTITY REQUIRED	PER ITEM COST
R-1051B/URR	HF Receiver	2Z5820-00-948-3408	4	$5770
SB-973/SRR	Receiver SWBD	4G5820-00-892-3300	4	114
AN/SRC-20	UHF Transceiver	2Z5820-00-987-6601	2	8500
AN/URT-23	HF Transmitter	2Z5820-00-945-4221	4	9800
SB-863/SRT	Switchboard	2Z5820-00-587-4966	2	630
C-1004B/SG	Transmitter Control	IN5815-00-602-4406	4	482
AN/SGC-(1)	Tone Terminal	4G5815-00-642-8888	2	850
CV-2460/SGC	Tone Terminal	4G5805-00-458-0954	2	815
SB-1203A/UG	Non-Secure TTY Panel	4G5820-00-077-4406	8	89
PP-3495C/UG	Rectifier	IN6130-00-058-0124	4	150
AN/UGC-6	Teletype Mach	4G5815-00-681-9890	4	3750
SB-1210A/UGQ	Secure TTY Panel	4G5820-00-077-4381	6	113
AN/UGC-25	Teletype Mach	4G5815-00-926-0157	10	1480
AN/SRA-12B	RCVR Ant Patch Panel	5915-00-855-9853	2	450
AN/URR-35	UHF Receiver	4G5820-00-508-1814	2	1350
SB-988/SRT	Switchboard	4G5820-00-691-2554	2	507
KWX-8/TSEC	Remote	CMS	4	NONE
KW-7/TSEC	CRYPTO Unit	CMS	4	NONE
KWL-4/TSEC	CRYPTO Unit	CMS	4	NONE
KWR-37/TSEC	CRYPTO Device	CMS	2	NONE
KWT-37/TSEC	CRYPTO Device	CMS	1	NONE
KG-14/TSEC	CRYPTO Unit	CMS	9	NONE
AN/URA-17	Converter	2Z5820-00-474-3975	2	3540

PROFESSOR ED SPECS COMMENTS:

POINT 1: "Training Aids" is defined in OPNAVINST 1500.39 (q.v.) as "all material of a demonstrative and manipulative variety which assist in the instructional process...(including) everything except written or printed materials and logistics support equipment."

POINT 2: The designator numbers assigned to the instructional charts in this example are locally (FLETRACEN) devised according to unit and lesson topic in which each is used. Those numbers given to the transparencies and the slides are as they would be if the aids were developed (as they properly should be) by NETSCLANT. NETSCLANT services include training aids development, production, and number assignment.
(See Legend below)

Legend:

5-FTC-(COMM)-7500000.1T

- 5 — Naval District
- FTC — Command
- (COMM) — School Preparing Training Aids
- 75 — Fiscal Year
- 00000 — Identifying Number
- 1 — Sequence Number
- T — Transparency (C - Chart, S - Slide)

(Ref: NETSCLANT SYSTEM)

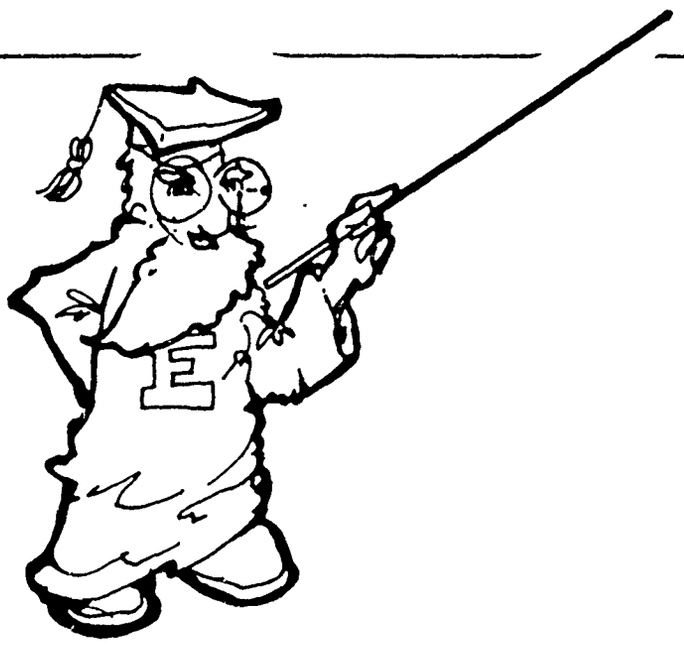
ANNEX I - TRAINING AIDS

NOMENCLATURE	NATIONAL STOCK NR.	DEVICE DESIGNATOR NUMBER	QUANTITY REQUIRED
Instructional Charts			
R-1051B/URR		2-1-1C	1
R-1051D/URR		2-1-2C	1
AN/URA-17		2-2-1C	1
AN/SGC-1		2-2-2C	1
CV-2460/SGC		2-2-3C	1
AN/SRA-12B		2-3-1C	1
SB-1203/UG		2-4-1C	1
SB-1210/UGO		2-4-2C	1
Transparencies			
AN/URA-17 Converter	5-FTC-(Comm)-7500001-1T		1
SB-1203/UG Panel	5-FTC-(Comm)-7500001-2T		1
Safety Systems - November On-Line	5-FTC-(Comm)-7500001-3T		1
35mm Slides			
Effective On-Line Systems	5-FTC-(Comm)-7500001.1-23S		1
16mm Films			
It's Your System		MN-10965	1
Patch Panel Adjustments		MN-11121	1

PROFESSOR ED SPECS COMMENTS:

POINT 1: "Training Aids Equipment" is defined in OPNAVINST 1500.39 (q.v.) as "Audio-visual equipment which is used by the instructor or student to enhance the process of teaching or learning; and which is not itself the subject of instruction."

POINT 2: FLETRACEN training support personnel will assist you in determining the National stock number and the device designator number of the training aids equipment to be used.



ANNEX I - TRAINING AIDS EQUIPMENT

NOMENCLATURE	NATIONAL STOCK NR.	DEVICE DESIGNATOR NUMBER	QUANTITY REQUIRED
AS LISTED IN INDEX TO DIRECTORY OF NAVAL TRAINING DEVICES COGNIZANCE SYMBOL "2O"			
Projector, Overhead	6910-00-789-4047	4A8	1
Projector, Slide 2x2, Carousel 800	6730-00-323-0207	4G204	1
Projector, 16mm	6730-00-530-4692	4A1	1
Screen, Projection Standard	6730-00-558-5876	2B6	1

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ANNEX II

BIBLIOGRAPHY

PROFESSOR ED SPECS COMMENTS:

The distinction between a text and a reference is sometimes quite fine. As a general guideline, consider a text a publication which each student is given at the beginning of a course for somewhat constant use throughout the course, and a reference as a publication used primarily by the course preparers for resource information and perhaps only occasionally by the student during the course. Note that instruction sheets are listed under military publications.

Note: If instruction sheets are made part of a student's guide, it is not necessary to list the sheets separately as in this sample. Simply include the student's guide as a text.

ANNEX II - TEXT MATERIALS

A. MILITARY PUBLICATIONS

NUMBER (MILPUBS)	COMPLETE TITLE
NAVSHIPS 0967-LP-002-0160	Naval Communications
NAVELEX 0967-LP-206-2020	Communication Technician's Handbook

INSTRUCTION SHEETS	DESIGNATOR NUMBER	QUANTITY REQUIRED
Diagram Sheets:		
BRAVO	4-1-1D	1 per student
CHARLIE	4-1-2D	1 per student
DELTA	4-2-1D	1 per student
GOLF	4-2-2D	1 per student
Information Sheets:		
BRAVO AND CHARLIE	4-1-1I	1 per student
DELTA AND GOLF	4-2-1I	1 per student
Job Sheets:		
NOVEMBER	2-4-1J	1 per student
BRAVO	5-1-1J	1 per student
CHARLIE	5-1-2J	1 per student
DELTA	5-2-1J	1 per student
GOLF	5-2-2J	1 per student

B. CIVILIAN PUBLICATIONS

AUTHOR (COMMERCIAL OR CIVILIAN PUBS)	COMPLETE TITLE, PUBLISHING COMPANY, EDITION, DATE
James, Henry and William Mason	You Can Be A Communicator. Brandywine Publishers, 2nd Ed., 1972.

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ANNEX II - REFERENCES

A. MILITARY PUBLICATIONS

NUMBER	COMPLETE TITLE
NAVSHIPS 0967-LP-000-0000	Electronics Installation and Maintenance Book "General"
ACP 122	Communications Instructions - Security
NTP 4	Naval Telecommunications Procedures Fleet Communications
OPNAVINST 5510.1	Manual for Security of Classified Information
KAG 1/TSEC	Communications Security Policy and Procedures (C) (NOFORN)
U. S. CODE, TITLE 18	Espionage Laws and Federal Statutes
JANAP 195	Basic Armed Forces Communications Plan
NAVSHIPS 0967-LP-970-9018 VOL I	Technical Manual Radio Receiver R-1051B/URR
NAVSHIPS 0967-LP-878-3010 VOL I	Technical Manual Radio Receiver R-1051D/URR
NAVSHIPS 0967-LP-878-3020 VOL II	Operators Handbook Radio Receiver R-1051D/URR

B.

AUTHOR (COMMERCIAL OR CIVILIAN PUBS)	COMPLETE TITLE, PUBLISHING COMPANY, EDITION, DATE
Anderson, G. B.	The Communication Process, Glenshelia Press, 3rd ed., 1974.
Wyatt, Winslow W.	Security in the U. S. Government, Weyanoke Publishing Co., 1st ed., 1975.

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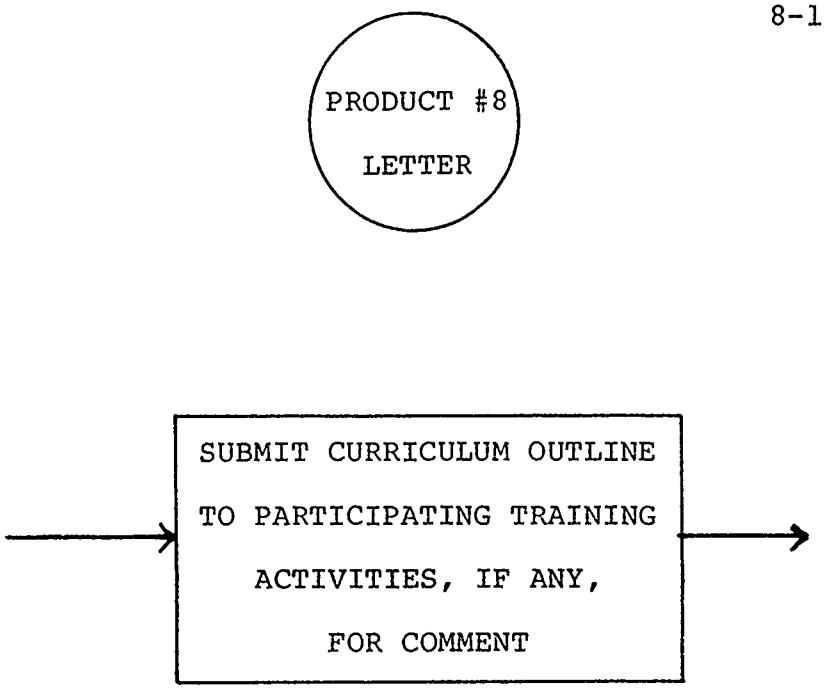

SAMPLE COVER LETTER

TO

PARTICIPATING TRAINING ACTIVITIES*

*Refer to page i-5 for the complete thirteen product course Development Flow Char t.

PROFESSOR ED SPECS COMMENTS

The purpose of this letter is to forward copies of the "draft" curriculum outline to those training activities that are presently teaching the same course. It will give these training activities the opportunity to review the material and provide their comments and recommendations as to the suitability and content of your curriculum outline and training scheme. Comments are sought regarding the accuracy of technical subject matter and the ability of the activity to conduct the training as proposed. Hopefully, your curriculum outline will not present major "surprises" or disagreements because of your early liaison efforts with these activities during the initial course revision/development phase.

The letter is addressed to those activities teaching the same course for action. The functional commander (i.e. COMTRALANT or CNTECHTRA) may be included as a copy to addressee. Similarly one may include other interested commands such as the cognizant systems command.

Generally, it will require approximately 3 to 4 weeks for the training activities to respond to your letter.

(FTC LETTERHEAD)

1500/
Ser N322/
24 March 1976

From: Commanding Officer, Fleet Training Center, Norfolk, VA 23511
To: Commanding Officer, Fleet Training Center, Mayport, FL 32228
Commanding Officer, Fleet and Mine Warfare Training Center, Naval Base, Charleston, SC 29408

Subj: Curriculum Outline for Communications On-Line Systems Operator (Basic) (J-201-0827)

Ref: (a) CNTT-A10

Encl: (1) Curriculum Outline for Communications On-Line Systems Operator (Basic) (J-201-0827)

1. Enclosure (1) is forwarded for review and comment in accordance with paragraph 4.4 of section 3 of reference (a).

2. The proposed curriculum outline, enclosure (1), is intended for replacement of the October 1971 curriculum outline for the same course and includes numerous minor changes to improve subject matter currency and adds a unit to provide practical application of on-line systems.

Copy to:
COMTRALANT (w/encl)

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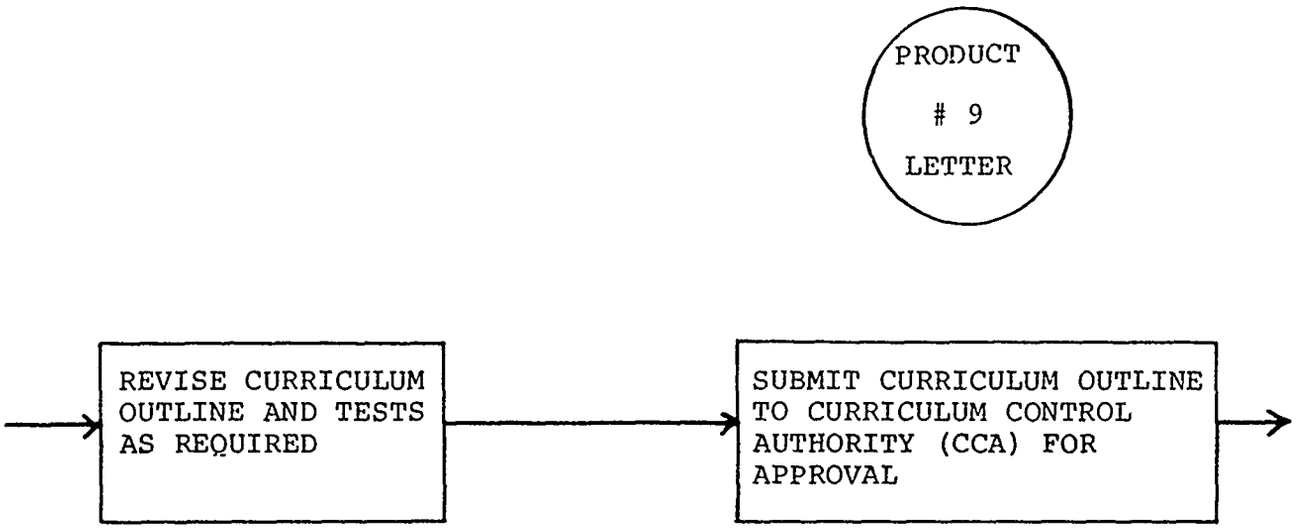

SAMPLE COVER LETTER

FORWARDING CURRICULUM OUTLINE

TO

CURRICULUM CONTROL AUTHORITY*

*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

PROFESSOR ED SPECS COMMENTS

This letter forwards your curriculum outline to the command exercising curriculum control authority for official approval. The most difficult aspect of this letter is to be able to state that participating training activities concur with the curriculum outline. Without this concurrence which may include revising the curriculum outline, unresolved differences must be presented to the curriculum control authority for reconciliation.

Normally, distribution of this letter with enclosure is minimal and addressed only to the curriculum control authority. The broader distribution stated on the distribution page of the curriculum outline is made only after official approval has been received. Approval is generally received in the form of a letter of promulgation which will be inserted in the curriculum outline itself prior to distribution.

(FTC LETTERHEAD)

1550/
Ser N322/
24 April 1976

From: Commanding Officer, Fleet Training Center, Norfolk, VA 23511
To: Commander Training Command, U. S. Atlantic Fleet, Norfolk, VA 23511

Subj: Curriculum Outline for Communications On-Line Systems Operator (Basic) (J-201-0827); request for approval of

Ref: (a) COMTRALANT INST 1550.4 NOTAL
(b) CO FTC MYPT ltr Ser 421 of 12 Apr 76 NOTAL
(c) CO FLEMINEWARTRACEN CHASN ltr Ser 37 of 15 Apr 76 NOTAL

Encl: (1) Curriculum Outline for Communications On-Line Systems Operator (Basic) (J-201-0827)

1. Two copies of enclosure (1) are forwarded for review and approval action in accordance with reference (a).

2. The participating teaching activities, with only minor exceptions, have concurred with the contents of enclosure (1) as indicated by references (b) and (c) and informal telephone conversations. The minor changes recommended by the teaching activities have been included in the curriculum outline.

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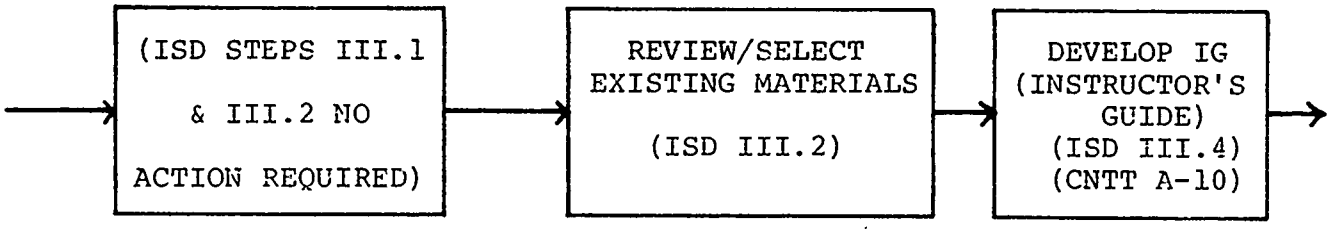
PRODUCT
10



SAMPLE

INSTRUCTOR'S

GUIDE*

*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

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FOR OFFICIAL USE ONLY

INSTRUCTOR'S GUIDE

FOR

COMMUNICATIONS ON-LINE SYSTEMS OPERATOR (BASIC)

J-201-0827

PREPARED BY
FLEET TRAINING CENTER
NORFOLK VIRGINIA 23511

PREPARED FOR
COMMANDER TRAINING COMMAND, U. S. ATLANTIC FLEET

28 NOVEMBER 1975

PROFESSOR ED SPECS COMMENTS:

Frequently at the Fleet Training Center, the term "instructor's guide" is used synonymously with "lesson topic guide" or "lesson plan." Since an instructor's guide consists of the front matter (as included in this sample) and all the lesson topic guides for a given course, you can see that the terms are not correctly interchangeable. Each lesson topic guide is only a part of the total package that is properly called the instructor's guide. By the way, "lesson plan" is now an obsolete term, having been replaced by "lesson topic guide" (abbreviated LTG). All of this is in accord with CNTT-A10 and CNETINST 1500.12 (chg 1).

FOREWORD

Training Task analysis for Communications On-Line Systems Operator (Basic) course was performed by Communications School Instructors at Fleet Training Center, Norfolk, Virginia. The job task analysis was performed by PQS teams.

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DISTRIBUTION

Activity	No. of Copies
FLETRACEN Norfolk, VA	10
FLEMINEWARTRACEN Charleston, SC	10
FLETRACEN Mayport, FL	10

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RECORD OF CHANGES

COURSE NO. J-201-0827

NO.	ACTIVITY	SUBSTANCE	ENTERED BY	DATE

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TABLE OF CONTENTS

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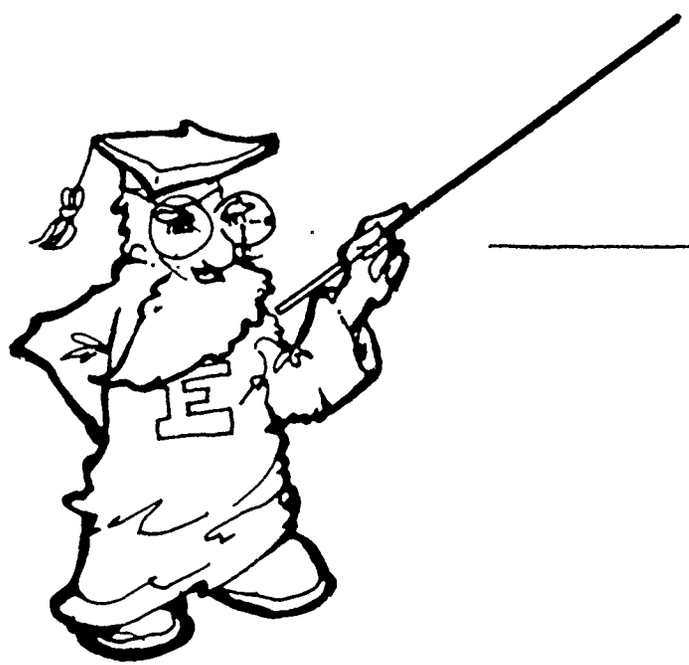
PROFESSOR ED SPECS COMMENTS:

Whenever safety hazards of any nature exist either through the conduct of the course in the classroom or laboratory or through execution of the subject matter aboard ship, such hazards should be clearly indicated in the safety notice section of the instructor's guide. Specific tie-ins should also be included at the appropriate places in the lesson topic guides. If there are no safety hazards related to the content or execution of a specific course, the safety notice may be omitted from the instructor's guide. In such a case, care should be taken to eliminate the term "safety notice" from the table of contents.



SAFETY NOTICE

The Communications On-Line Systems employ voltages which are considered dangerous to life. Conditions which contribute to exposure to shock hazard are more prevalent aboard ship than in the classroom due to confined conditions and metal bulkheads. Therefore, it is important that instructors and students practice good equipment and personnel safety procedures. All applicable safety precautions set forth in Section 2 of EIMB NAVSEA 0967-LP-000-0100, and other pertinent instructions must be observed.

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HOW TO USE THIS INSTRUCTOR'S GUIDE

This Instructor's Guide was developed from the approved Curriculum Outline for the course. It is intended for use as a basic outline in classroom instruction. (For guidance purposes, you should be familiar with the Curriculum Outline.) Ample space has been provided for you to make notes that will help you in teaching the course. Thus, you can readily convert it to a set of personal lesson topic guides by making notes and by adding supplemental pages such as marked-up diagram sheets or filled-in notetaking sheets. The learning objectives and the outline of instruction included in each lesson outline prescribe the minimum content for that lesson, and will not be modified without proper authorization.

The lesson topic guides are grouped in units and provide you with the outline of instruction for each lesson topic of this course. The numbering system is consistent with that used in the Curriculum Outline. The outline of instruction is sequenced in the same order in which the learning objectives are listed. The pages of the lesson topic guides are printed in a horizontal format for ease of use in the classroom.

The two-column Lesson Topic pages contain information that will help you prepare yourself for teaching the lesson. Found therein for each lesson topic is the security classification, the time allotment in contact hours, and the objectives as contained in the Curriculum Outline. Also, furnished is a list of all instructional materials, the Criterion tests required, and the homework assignments.

The three-column "Outline of Instruction/Instructor Activity/Student Activity" pages contain the outline of instruction, developed in sufficient depth to be used as your primary teaching document. Related instructor and student activities that enhance the learning process are also listed.

"Outline of Instruction" Column. This column contains the major points of the subject matter to be covered during the lesson, in full textbook narrative form, descriptive phrases, or key words as appropriate. In general, it outlines concepts, theories, descriptions, processes, procedures, etc. For economy, if entries are not needed in the Instructor Activity or Student Activity columns, information normally printed in the Outline of Instruction column is printed across the entire page.

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"Instructor Activity" Column. This column points out activities which the instructor must carry out during the lesson topic in addition to oral discussion or lecture. It includes such activities as projection of transparencies, films, or slides, and the use of charts, models, mockups, simulators, and other training aids or devices. These activities are keyed to the related subject matter.

"Student Activity" Column. This column points out student activities which will help each student during the acquisition and application phases of the learning process. Activities listed lead directly to his achievement of the objectives and development of his ability to do practical work. Typical entries include the following:

Hints for use of the Student's Guide; general and specific directions for classroom, laboratory or workshop time; notes emphasizing observance of personnel and equipment safety precautions; and security procedures which must be followed.

Modification or Revision. The teaching directions given in the instructor and student activity columns reflect the best judgement of the writers as to the most effective teaching procedures. They should normally be followed as written. Should you prefer techniques or aids not listed in the Instructor Activity column, you are free to use them, subject to your supervisor's approval, provided that the topic objectives are achieved. Caution is advised in making changes before you have taught the lesson more than once. You are expected to add your personal teaching directions to those contained herein, particularly in the Introduction, Presentation, Summary and Informal Test areas.

You should submit your personal lesson topic guide to your supervisor for approval prior to teaching a lesson for the first time.

If your experience in teaching the lesson later convinces you that changes or additions are desirable, consult with the education specialist or learning evaluator and submit your recommendations to the Course Curriculum Model Manager (CCMM) via the appropriate channels.

Evaluation of Student Performance. Student progress will be evaluated by means of criterion-referenced tests, both written and performance. Written tests will range from study questions on assignment sheets to classroom-administered multiple-choice, matching or completion test items. Performance tests will range from informal application in the lab, guided by a job sheet (such as equipment operation, planned maintenance or alignment), to the more formal system troubleshooting done under carefully controlled conditions. Appropriate tests for the objectives of each topic are specified in the lesson outline.

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Numerical grades will not be assigned. Each student will be given a final mark of SAT or UNSAT, depending upon whether he achieved each end-of-course and topic objective. To facilitate recording the student's progress, it is suggested that a locally prepared Objective Achievement Summary Sheet be maintained for each student.

CNT INSTRUCTION 1540.2 provides detailed guidance concerning criterion testing.

PROFESSOR ED SPECS COMMENTS:

Instructional Materials: Use category headings to indicate the nature of the materials. Publications which are distributed to students should be listed as "Texts." Training aids should be identified by number and title in accordance with the current numbering system. Training aids equipment and training equipment should be specifically identified.

All of the categories under INSTRUCTIONAL MATERIALS are sequenced in the same order as they are in Annexes I and II of the curriculum outline for ease in transferring information from the curriculum outline to the LTG cover pages. Each of the five underlined categories under INSTRUCTIONAL MATERIALS should appear on each LTG cover page. If a topic does not utilize a given category, the word "None" should be included after the title. Under "2. Training Aids", include only those sub-categories of aids actually used in that lesson topic. In this sample, "Instructional Charts" is included because charts are used during the instruction of this lesson topic. If your lesson topics don't employ charts, don't include the title. Similarly, if there are more than one of a particular kind of training aid used, make the heading plural. In the sample on the facing page, "Charts" is plural because there are more than one; "Transparency" is singular because only one is used.

Learning Objectives: Learning objectives should agree with those listed in the curriculum outline. If the curriculum outline is developed according to the format exemplified in this sample, the course developer is able to "lift" the objectives directly from each lesson topic objective page in the curriculum outline and insert them on the appropriate lesson topic cover page as has been done in this sample. If a particular objective does not appear on a lesson topic objective page in the curriculum outline, it should not appear on the related LTG cover page. (Incidentally, other bits of information contained on lesson topic objective pages in the curriculum outline should be exactly the same on the respective LTG cover pages. These bits include the lesson topic number and title and the classroom and laboratory contact hours.)

5398P8

FLEET TRAINING CENTER
NAVAL STATION
NORFOLK, VIRGINIA 23511

Date: 30 September 1975

Communication On-Line Systems Operator (Basic) J-201-0827

Security Classification: UNCLASSIFIED

Lesson Topic 2.4:
Introduction to D. C. Patch Panels

Time Allocation: Classroom - 0.5 Hours
Laboratory - 0.5 Hours

INSTRUCTIONAL MATERIALS

1. Training Equipment

   a. SB-1203A/UG

   b. SB-1210A/UGQ

2. Training Aids

   a. Instructional Charts:

      (1) 2-4-1C - SB-1203/UG

      (2) 2-4-2C - SB-1210/UGQ

   b. Transparency:

      (1) 5FTC(COMM)-7500001.3T

   c. 16mm Film:

      (1) MN-11121 "Patch Panel Adjustments"

3. Training Aids Equipment

   a. Projector, Overhead

   b. Projector, 16mm

   c. Screen, Projection, Standard

4. Text

   a. Communications Security Policy and Procedures (c) (NOFORN), KAG-1/TSEC.

   b. Instruction Sheet:

      (1) 2-4-1J - November Communications System

5. References

   a. NAVSHIPS 95718 - Technical Manual for Communications Patch

   b. OPNAVINST C2300.40 - Shipboard Communications Quality Monitoring and Control

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TERMINAL OBJECTIVES:

Supported entirely by this lesson topic: NONE

Supported partially by this lesson topic and partially by Units 4.0 thru 6.0.

8.0 Given a shipboard communications space containing the SB-1203/UG and SB-1210/UGQ direct current patch panels, associated equipment and publications, the communications system and/or configuration to be established, associated equipment and publications, and no supervision; the student will be able to SELECT the proper patch panel and INTERCONNECT equipments to establish the communications system in less than 15 minutes lAW Communications Security Policy and Procedures (c) (NOFORN), KAG-1/TSEC.

ENABLING OBJECTIVES:

Supported entirely by this lesson topic:

2.4.1 Given the name of a DC patch panel (SB-1203 or SB1210) and a list of paired communication equipments, the student will be able to SELECT the pair or pairs of equipments that may be correctly interconnected by the patch panel. Satisfactory performance will be measured by correctly answering one out of two multiple choice questions from memory lAW Communications Security Policy and Procedures (c) (NOFORN), KAG-1/TSEC. (PQS tasks: NAVTRA 43196-6-201.21 thru .26).

Supported partially by this lesson topic: NONE

CRITERION TEST

Accomplish enabling objective 2.4.1 by correctly answering at least one of two of the DC Patch Panel questions on written examination 2-4-1T.

HOMEWORK

Read pp. 1013 to 1032, inclusive in course text, NAVSHIPS 0967-LP-002-0160.

PROFESSOR ED SPECS COMMENTS:

1. All six parts (INTRODUCTION, PRESENTATION, APPLICATION, SUMMARY, INFORMAL TEST, and ASSIGNMENT) of the lesson topic guide should always be provided for. Occasionally, APPLICATION, INFORMAL TEST, or ASSIGNMENT may not be appropriate for a particular lesson topic guide. In such a case, the word "None" may be used after the part title, or some brief explanation may be provided. (See Part VI "INFORMAL TEST" in this sample.)

2. The INTRODUCTION as developed in this sample is broad enough to be used verbatim in almost any lesson topic guide.

3. The handwritten information in this sample lesson topic guide is provided to point out in part how an individual instructor might personalize his lesson topic guide after it has been printed and during the time he is preparing to teach from it. Reference to this is made in the "How To Use This Instructor's Guide" section of this sample.

0326P8

OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
I. INTRODUCTION		
A. Contact	A. Introduce self and topic. Provide for student needs, including the following:	
	1. Muster	
	2. Comfort	
	3. Visibility and seating	

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
B. Readiness	B. Ensure students are prepared to learn. Lead into the subject matter with an attention-getting device; something that will gain and hold their interest. Tell a good tie-in story.	
C. Effect	C. Explain value of subject matter, pointing out where appropriate, its relationship to the student's professional and personal development. Seek to motivate.	
D. Overview	D. 1. State learning objectives as contained on cover pages to this lesson topic.	

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
	2. State procedures to be followed during lesson.	
	a. Taking notes	
	b. Asking questions	
	c. Use of criterion test	
	3. Invite questions concerning objectives and procedures.	3. Ask questions concerning objectives or procedures if in doubt.

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
II. PRESENTATION		
A. Purpose of the SB-1203/UG patch panel		A. Ask questions if information not understood. Study chart carefully.
1. Interconnection of CRYPTO equipments and various types of terminal equipments	1. Using chart 2-4-1, explain method of interconnecting.	
2. Transfer of CRYPTO equipments and terminal equipments CAUTION: If transfers effected improperly, dangerous voltages may be exposed. Always transfer set to loop. Use transparency 5FTC(COMM) - 7500001.3T to show how incorrect transfer exposes voltages.	2. Using chart 2-4-1, explain transfer abilities.	Compare correct and incorrect methods.

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
B. Functions of SB-1203/UG patch panel		
1. Six channels	1. Indicate six channels on chart 2-4-1.	
2. Three groups of jacks	2. Point out jacks on chart 2-4-1.	
a. Three LPG (Looping) jacks per channel		
b. One SET jack per channel		

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
c. One miscellaneous (MISC) per channel		
3. Six line current rheostats for adjusting line current in each individual loop	3. Point out on chart 2-4-1.	
4. Line current meter for reading loop current	4. Point out on chart 2-4-1.	
5. Line current meter selector switch to select any one of the six channels for monitoring and adjusting line current	5. Point out on chart 2-4-1.	

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
C. SB-1203/UG patch panel normal use in black circuits aboard ship	C. Ask students questions on black-red.	C. Answer questions posed by instructor.
D. Purpose of the SB-1210/UGQ patch panel		
1. Interconnection of teletypes and various CRYPTO equipments	1. Using chart 2-4-2, explain methods of interconnection	
2. Transfer of teletypes and CRYPTO equipments	2. Using chart 2-4-2, explain transfer abilities.	

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
CAUTION - If transfer effected incorrectly, dangerous voltages may be exposed. Always transfer set to loop. Use transparency 5FTC(COMM)-7500001.3T to show how incorrect transfer exposes voltages.		Compare correct and incorrect methods.
E. Functions of the SB-1210/UG patch panel		
1. Six channels	1. Point out on chart 2-4-2.	
2. Three groups of jacks	2. Point out on chart 2-4-2.	

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
a. Two LPG (looping) jacks per channel		
b. Two SET jacks per channel		
c. One miscellaneous (MISC) jack per channel		
3. Six line current rheostats for adjusting line current in each individual loop	3. Point out on chart 2-4-2.	

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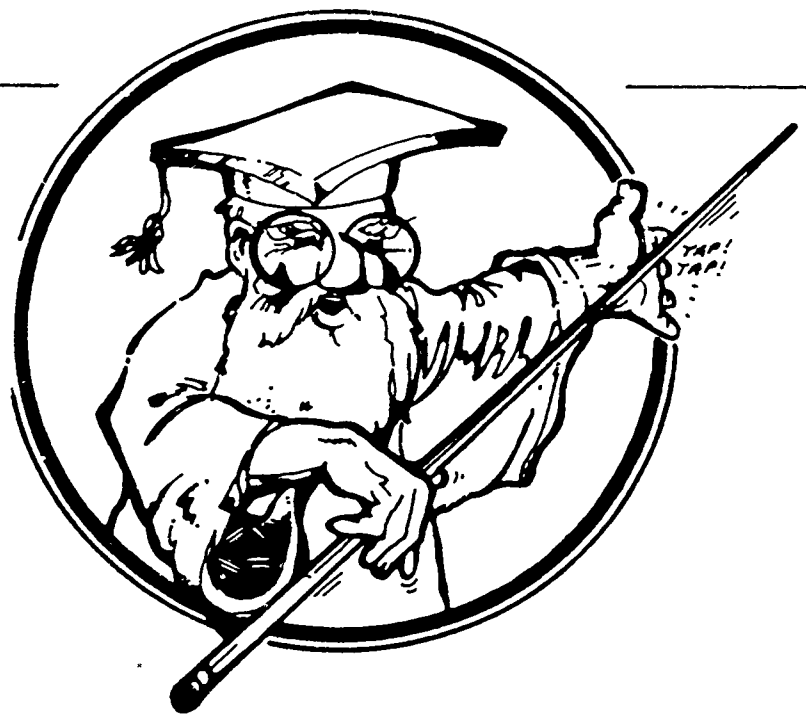
OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
4. Line current meter for crading loop current	4. Point out on chart 2-4-2.	
5. Line current meter selector switch to select anyone of the six channels for monitoring and adjusting line current	5. Point out on chart 2-4-2.	
F. SB-1210/UGQ patch panel normal use in red circuits aboard ship	F. Ask students questions on red-black.	F. Answer questions posed by instructor.
G. 16mm film: MN-11121, "Patch Panel Adjustments"	G. Introduce and show film. Summarize main points upon conclusion of film.	G. View film.

PROFESSOR ED SPECS COMMENTS:

Sections A, B, and C under Part IV - SUMMARY are standard and should be included in all lesson topic guides. Of course, the breakdown under section C, Recap of Lesson, will be developed according to the material covered in the PRESENTATION part of the lesson topic guide.

The Summary and Application sections may be reversed if it aids the flow of the lesson topic.



OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
III. APPLICATION		
Job Sheet 2-4-1	Move to lab and supervise each student's completion of Job Sheet 2-4-1, initialing his job sheet where appropriate. Emphasize safety.	Complete Job Sheet 2-4-1. Ask questions if procedures are not clear.
IV. SUMMARY		
A. Introduction	A. Emphasize importance of the summary for the student.	
1. Nature of summary.		
2. Purpose of summary.		

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
B. Directions to students.		
1. Questions		
2. Notes		
C. Recap of lesson	C. Emphasize safety	C. Ask questions if material not clear; check notes to insure accuracy and completeness.
1. SB-1203/UGQ patch panel		

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OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
a. Purpose		
b. Function		
c. Safety precautions.		
2. SB-1210/UGQ patch panel.		
a. Purpose		

PROFESSOR ED SPECS COMMENTS:

Section VI - ASSIGNMENT. The assignment given here is for the next lesson topic or for the next day. This differs from the Homework section on page 2-4-2 which applies to this lesson topic.

OUTLINE OF INSTRUCTION	INSTRUCTOR ACTIVITY	STUDENT ACTIVITY
b. Function		
c. Safety precautions.		
V. INFORMAL TEST	Administer multiple choice exam 2-4-1T covering lesson topics 2.1 thru 2.4.	Complete multiple choice exam 2-4-1T.
VI. ASSIGNMENT To read pp. 1033 to 1050, inclusive, in course text, NAVSHIPS 0967-LP-002-0160.	Provide students with the homework assignment.	Ask questions if the assignment is unclear. Complete assignment.

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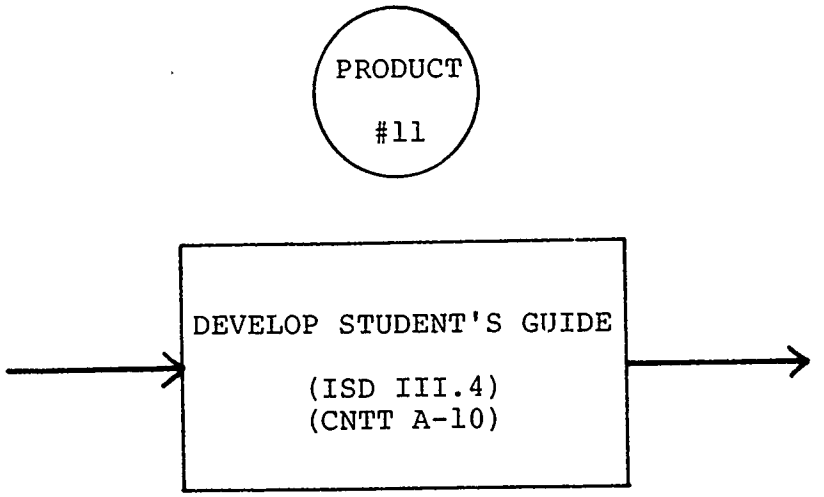


SAMPLE

STUDENT'S

GUIDE*

-ASSIGNMENT SHEET

-DIAGRAM SHEET

-INFORMATION SHEET

-JOB SHEET

-NOTETAKING SHEET

*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

PROFESSOR ED SPECS COMMENTS:

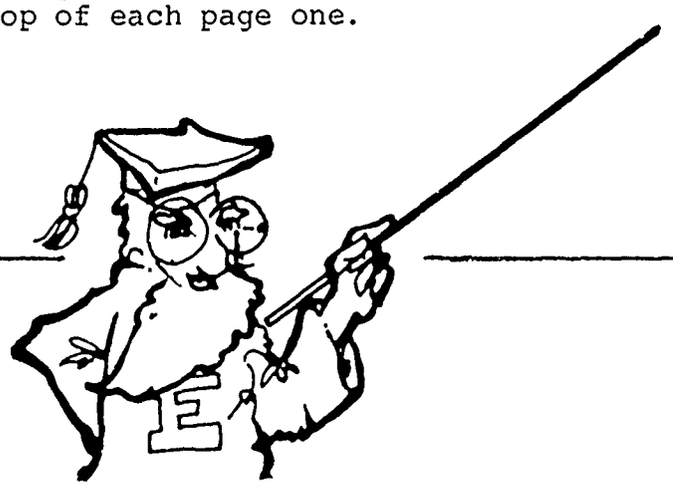
There are, generally speaking, five types of instruction sheets. These are, in alphabetical order, the assignment sheet, the diagram sheet, the information sheet, the job sheet, and the notetaking sheet. A sample of each appears following this brief introduction. The format for each is based on a combination of guidance provided in CNTT-A10 and the Military Standard 1379A (Navy), with only minor local modification. The subject matter content in these sample instruction sheets is not completely accurate; some liberties were taken with basic information to illustrate certain points.

The numbering system for instruction sheets is as follows, using the sample assignment sheet as an example:

ASSIGNMENT SHEET 4-4-1A

- 1A — Assignment
- 4-4 — The first assignment sheet for this lesson topic (4.4)
- 4 — The unit and lesson topic number

If a sizable number of instruction sheets exists for a given course (as a rule of thumb, ten or more), they should be bound together to form a student's guide for the course. Adequate information for the formulation of the front matter of such a guide is available in CNTT-A10, beginning on page 3-43. If the instruction sheets are few in number for a particular course and are distributed singly as handouts, each should contain, in addition to the format information in the following samples, the course title and number, centered at the top of each page one.



ASSIGNMENT SHEET 4-4-1A

TITLE

RF Processor

OBJECTIVE(s)

When the student completes this lesson topic, he will be able to:

4.4.1 Given Job Sheet 4-4-1J, a TTRR RF Processor, and the appropriate technical manuals, ADJUST and TUNE the TTRR RF Processor obtaining a reading of not less than -1.5.

STUDY ASSIGNMENT

1.	NAVSHIPS 622-LP-234-0001, Technical Manual, Vol. I	Study paragraphs 1-47 through 1-51 on pages 1-22 and 1-24. Refer to Fig. 1-14 on page 1-25 while reading paragraphs 1-47 through 1-51.
2.	NAVSHIPS 622-LP-234-0001, Technical Manual, Vol. II	Study paragraphs 4-215 through 4-223 on page 4-410. Refer to Fig. 4-37 on page 4-411 while reading paragraphs 4-215 through 4-223.

STUDY QUESTIONS

1. What is the Frequency Range of the TTRR RF Processor?

2. What is the major advantage of using an unconverter-type receiver?

3. How many preselector filters are contained in the RF Processors and what are their frequency ranges?

4. What unit in the TTRR provides the gate control signals for the preselector filters in the RF Processors?

5. What unit in the TTRR provides the Local Oscillator signals for the RF Processors and what are their frequencies?

6. Why are two processors used in Class 1 operation?

PROFESSOR ED SPECS COMMENTS:

The following information on the content and application of each type of instruction sheet has been culled from OPNAVINST 1500.39, Glossary of Navy Education and Training Terminology, and from CNTT-A10.

(1) Assignment Sheet

Directs study or homework efforts of the student. Includes directions for the material to be read, questions which force the student's attention to pertinent information and techniques, problems and exercises when pertinent to the subject, and any other tasks which will enhance accomplishment by the student in the self-study situation.

(2) Diagram Sheet

May range from complete fold out schematic and block diagrams of flow charts to simple sketches or graphs. May sometimes contain blank portions to be completed by the student. Provided for use in class and for follow-up review and study during application. When a diagram sheet is identical to an existing drawing, such as a block or schematic drawing in a technical manual, the diagram sheet identification number will normally be added and the drawing reproduced in its existing form.

(3) Information Sheet

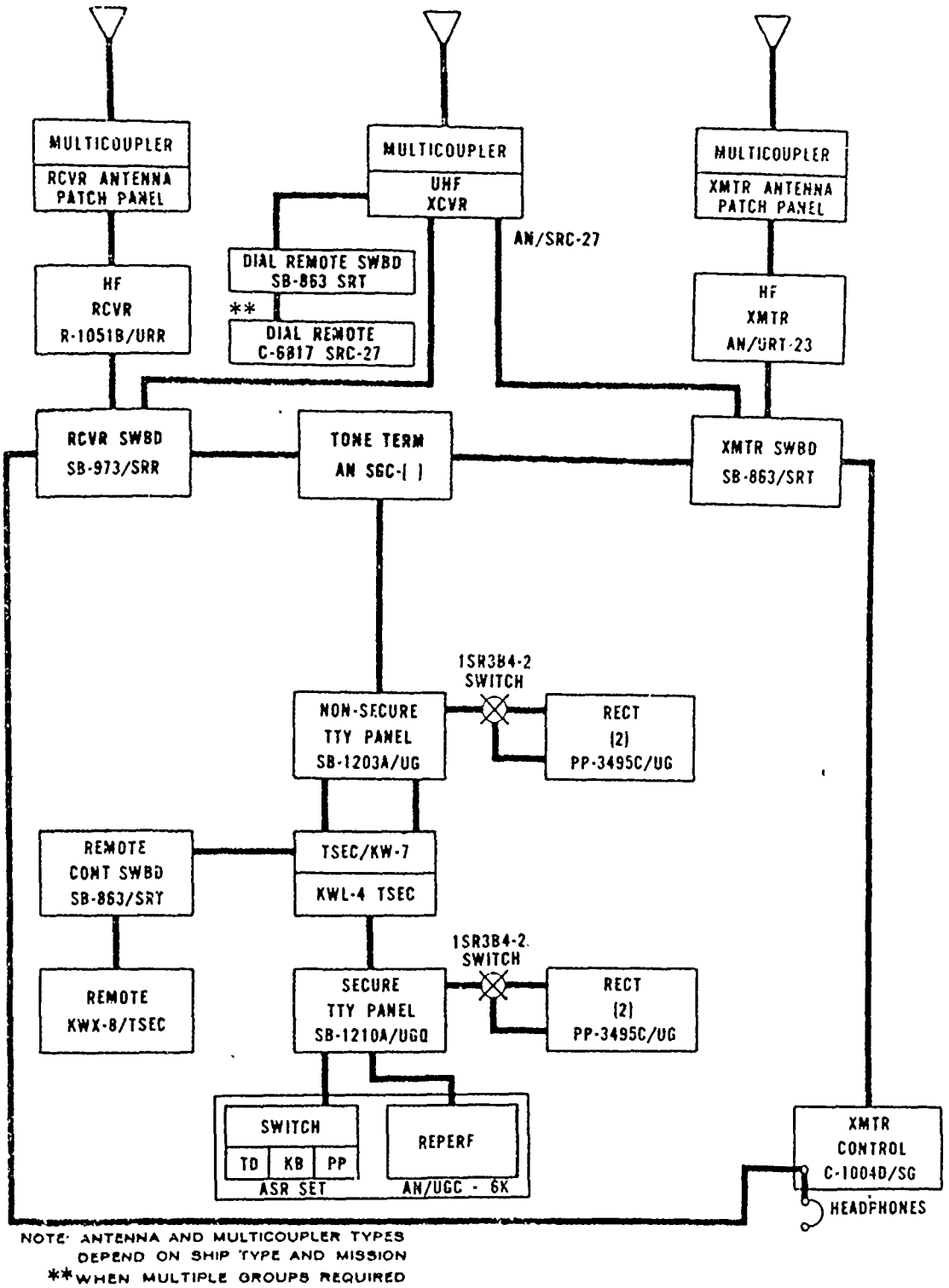
Provides information related to subject matter contained in texts or reference books that are required or useful but not readily available to the student.

(4) Job Sheet

Provides complete information required to perform a job, a task, or other unit of work involving a sequence of manipulative steps. Used to direct the student in the performance of a specific job. Used to supplement the instructor's demonstration of the operations to be done and tasks to be performed. May include provisions for recording data.

(5) Notetaking Sheet

Provides guidelines for the student in taking notes during classroom instruction. Provides the student with a framework to guide his notetaking.



Type "B" System Simplex (AFTS) (Hi LEVEL)

PROFESSOR ED SPECS COMMENTS:

The current trend is away from using information sheets and encouraging use of the actual technical manuals.

INFORMATION SHEET 4-4-1I

TITLE

Diode Attenuator

INTRODUCTION

Gain control of the RF Processors in the TTRR is accomplished through the use of diode attenuators. The Information section below describes the theory of operation of a typical diode attenuator.

REFERENCE

NAVSHIPS 622-LP-234-0001 Technical Manual for the TTRR.

INFORMATION

A diode attenuator consists of CR1, CR2, and CR3 along with associated biasing, coupling and decoupling elements. The diodes form a pi attenuator with variable impedance arms. Diodes CR3 and CR1 are the shunt arms and CR2 is the series arm.

The RE input signal is applied at the RF input jack, J1, and coupled into the attenuator through coupling capacitor C3. The attenuated RF output is taken from the RF output jack J2. The Control Input, J3, will have negative voltage in the range of -1.5 to -12 volts applied and the value of this voltage will determine the attenuation of the RF signal.

Resistors R7 and R5 form a voltage divider between -15 volts and ground providing a fixed voltage, at the junction of R7 and R5, of approximately -4.9 volts against which the incoming control voltage operates. This fixed bias is applied to diodes CR3 and CR1 and returned to ground through R3. The negative control voltage at J3 is also returned to ground through R2, CR2, and R3. The relative amplitudes of the control input and the fixed bias determines the forward bias for CR1, CR2, and CR3 and thus controls the attenuation of the RF signal as it passes through the device.

SUMMARY

The attenuation of the attenuator in Figure 1 varies inversely with the electron flow through CR2. If the electron flow through CR2 increases, attenuation decreases. If the electron flow through CR2 decreases, attenuation increases.

PROFESSOR ED SPECS COMMENTS:

The current trend is to direct students to a technical or operator manual rather than list job steps.

JOB SHEET 5-4-1J

TITLE

The November Communications System, Fleet Multichannel Broadcast (MULCAST) Covered Half Duplex VFCT

INTRODUCTION

The purpose of this job sheet is to provide the student with guidance and "hands-on" experience in activating the November System so that he might be able to perform related associated duties aboard ship.

The November System is a half duplex, VFCT, covered system (KWR-37 and KG-14). It is primarily used for the fleet multichannel broadcast, full period termination (receive) and overload channels. The MULCAST relies on the low, medium, high, and at certain locations, the ultra high frequency bands. The term "half duplex" can be defined as "being able to send or receive only." As applied to ship-board communications, the "N" System will be receive only.

REFERENCES

NAVSHIPS 0967-LP-000-0000	Electronics Installation and Maintenance Book "General"
NTP 4	Naval Telecommunications Procedure Fleet Communications

EQUIPMENT AND MATERIALS

1.	Antenna	7.	SB-1203A/UG
2.	AN/SRA-12B	8.	2SPP3495C/UG
3.	R-1051B/URR	9.	TSEC/KWR-37
4.	R-1051D/URR	10.	TSEC/KG-14
5.	SB-973/SRR	11.	SB-1210A/UGQ
6.	AN/UCC-1	12.	2 TT-176

JOB STEPS

1. Activate Equipment. Place the following power switches to the "ON" position:

   a. R-1051B/URR Mode Selector Switch to the FSK position
      R-1051D/URR Mode Selector Switch to the USB position

(This page left blank intentionally.)

b. AN/UCC-1 (Both control attenuators)

c. PP-3495 (Power supplies black and red)

d. TSEC/KWR-37 (Crypto device)

e. TSEC/KG-14 (Crypto device)

f. TT-176 (Teletype machine, two of them)

g. TS-2616 (Distortion analyzer)

INSTRUCTOR'S INITIALS _____

2. Activate System.

a. Ensure that an antenna is patched to the multi-coupler (AN/SRA-12B) input jack.

b. Select the desired frequency range on the AN/SRA-12B and patch to the R-1051B-D/URR input jack.

c. Tune the R-1051B/URR HF receiver, for FSK operation.

(1) Mode switch to the FSK position.

(2) Select the desired operating frequency (2 KHZ below the assigned frequency).

(3) Rotate the RF gain control fully clockwise.

(4) Place line level selection switch in ODB position.

(5) Adjust USB line level control for an ODB indication on the USB line level meter.

INSTRUCTOR'S INITIALS _____

SELF-TEST ITEMS

1. What is the reason for energizing the equipment prior to activating the system?

2. Why is it important to use the correct frequency range when using the AN/SRA-12B?

3. What would result from failure to place the line level switch in the ODB position?

(This page left blank intentionally.)

NOTETAKING SHEET 4-4-2N

TITLE

November On-Line Communications System

REFERENCES

NAVSHIPS 0967-LP-301-7020 Afloat Communications Systems Criteria Handbook, Volume II

NTP-4 Naval Training Publications Fleet Communications

NOTETAKING OUTLINE

A. Purpose

1. Fleet broadcast

2. _____

B. Mode of Operation

1. Audio frequency tone shift (AFTS)

a. Sixteen discrete channels

(1) _____

(2) _____

(3) _____

b. Two wave bands

(1) _____

(2) _____

2. Emission 3A7J

a. 3 - _____

b. A - _____

c. 7 - _____

d. J - _____

C. Systems Components

1. Antenna - absorbs RF energy from space

(This page left blank intentionally.)

2. SRA-12 and receive antenna RF patch panel

   a. Allows choice of antenna

   b. Enables use of one antenna to supply RF to numerous receivers. Results in some attenuation of the RF signal

3. Receiver - R1051/URR - converts RF energy to audio frequency energy

4. Audio Patch Panel - SB-973 - Allows connection to chosen receiver to converter

5. Converter - AN/UCC-1

   a. _____

   b. _____

6. Non-secure DC patch panel - SB-1203 - allows patching of individual channels of UCC-1 converter to CRYPTO devices (KWR-37 or KG-14)

7. CRYPTO devices

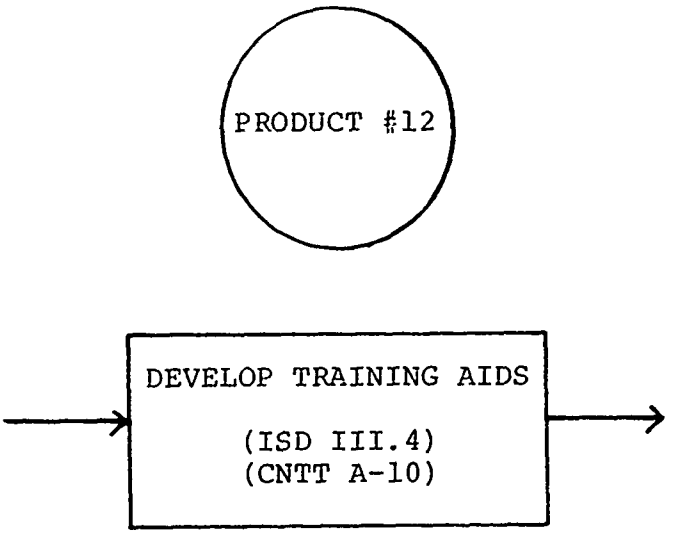
   a. _____

   b. _____

   c. Both accept encrypted traffic, decrypt, and produce plain language classified DC

8. Secure DC patch panel - SB-1210 - permits patching of CRYPTO device outputs to selected teletypes

9. Teletype page printer - converts DC to printed information



SAMPLE

TRAINING

AIDS

REQUEST*

*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

PROFESSOR ED SPECS COMMENTS:

Training Systems Support Branch Services Available•

The following services are available from the Training Systems Support Branch:

Drafting Shop	- Flock Cards - Charts - Graphs - Signs - Engraving - Training Aid Design Assistance
CCTV	- Transmission in buildings N-19A and N-30 by 1 March 77 - Script writing, editing, and assistance - Editing of audio and video tape - Audio and video tape narration - Television Production (black & white) - Instructor Self-Evaluation
General	- Issue and turn in of training aids; i.e. 16mm projectors, 35mm slide projectors, tape recorders, screens, etc. - Minor repair and maintenance of sound and projector equipment including issue of replacement projection bulbs. - Film loans and photographic services are available from NETSCLANT by filling out the appropriate local FTC form.

SAMPLE DRAFTING JOB ORDER

From: Director, Communications School

Security Classification: Unclass Date Submitted: 10 Jan '77

Date Required: 31 Jan '77 Recommended Priority: "C"

Description of job (size, quantity, color, etc.)

Make two transparencies of the attached message sample.
Total # required: 2.

/ / signature of director / /
Requested by

Date 10 Jan '77

Approved/Disapproved

/ / signature of TSBO / /
Training Support Officer

Assigned Priority: C

(This page left blank intentionally.)

SAMPLE MESSAGE FOR TRANSPARENCY

UNCLASSIFIED FOR INSTRUCTIONAL PURPOSES ONLY

0 142345Z SEP 71

FM COMNAVSECGRU WASHINGTON DC

TO ALCOM

BT

C O N F I D E N T I A L //NØ26ØØ//

ALCOM 85/71

CMS MATTERS

COMMO - ENSURE SEPARATE COPY TO CMS CUSTODIAN

1. (C) KILO ALFA KILO SIX THREE TWO CHARLIE DELTA POSSIBLY COMPROMISED AND AUTH FOR DESTRUCTION. EDITION CHARLIE ECHO EFFECTIVE ZERO ZERO ZERO ONE, ONE FIVE SEP 71 AND AUTH FOR DEST ZERO ONE OCT 71 EDITION CHARLIE FOXTROT EFFECTIVE ZERO ONE OCT WITH NORMAL MONTHLY SUPERSESSION THEREAFTER.

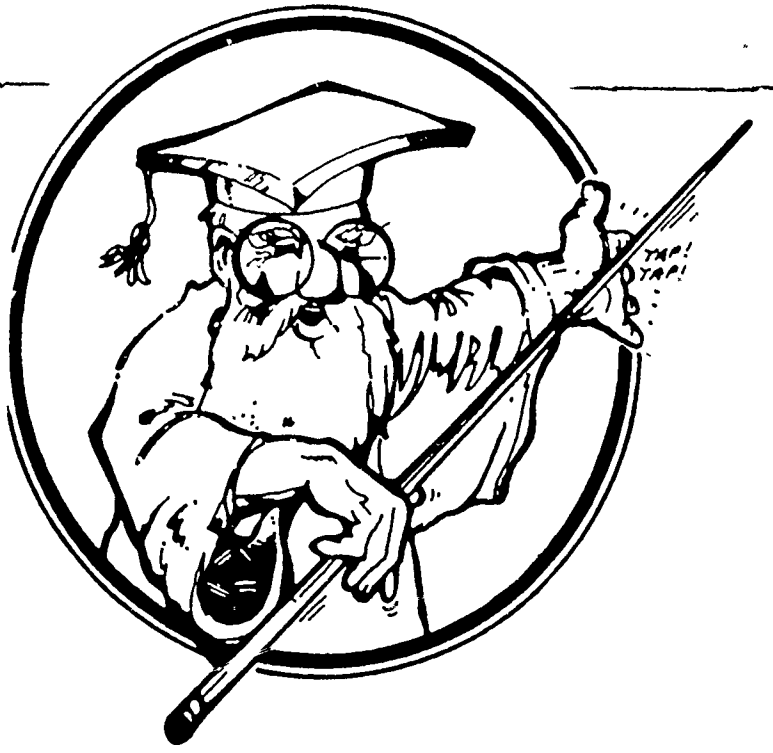
XGDS-3

BT

FOR INSTRUCTIONAL PURPOSES ONLY

PROFESSOR ED SPECS COMMENTS:

Specific instructions for completing these forms are outlined in FLETRACENORVA INST 1551.1C. In general, be sure to give all information concerning your request, i.e. dimensions, color scheme, type lettering desired, date required, etc. Finally, your school director must approve the chit before any action can be taken. So make sure that you follow instructions and have your school director approve the request to ensure smooth, rapid handling of your chit. The sample forms included in this section are examples of properly completed service request forms.



SAMPLE TRAINING AID/FILM REQUEST

From: Director, Communication School
To: Director, Training Support Department

Subj: Training Aid; request for

1. It is requested that the following training aids be issued on a completion of use basis to support an authorized training program:

a. Equipment or film number and name.

MN-11121 "Patch Panel Adjustments"

b. Type of training program:

Course J-201-0827 Communications On-Line Systems Operator (Basic)

c. Specific training objective for which the training aid is to be used:

d. Utilization of aid: Required by LTG to supplement classroom instruction

e. Rank and/or rate of trainees: E-5 to O-5

f. Number of classes using aid: 50 per year

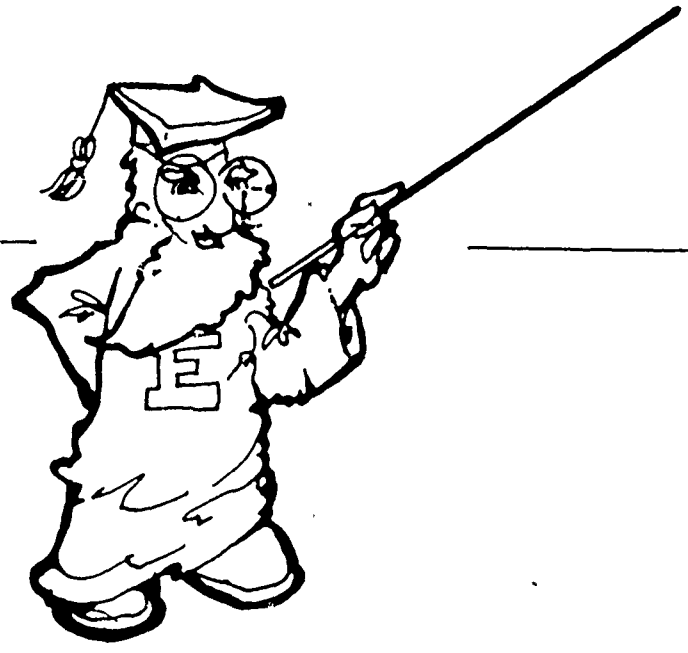
g. Frequency of use: Once per week

h. Anticipated termination of training program: Indefinite

// signature of director //

PROFESSOR ED SPECS COMMENTS:

Frequently, the Training Support Department of the Training activity will forward the request for services to Naval Education and Training Support Center, Atlantic (NETSCLANT) or another outside activity. Thus, these services sometimes take a month or more.



SAMPLE REQUEST FOR SERVICES

From: Director, Communications School
To: Director, Training Support Department

Subj: Training Support Services; request for

1. The following services are requested to support an authorized training program: (Circle One)

a. Photographer

b. Narrator

c. TV Cameraman

d. Illustrator

e. (Photo reproduction (Slides) or Prints)

f. Magnetic tape reproduction

g. Other Audio-Visual Service (Specify)

2. Date/Time service or services required and estimated completion Date/Time.

Required NLT 31 Jan '77

3. Job Description

Make 3 copies each of 50 original slides provided. Total # required, 150.

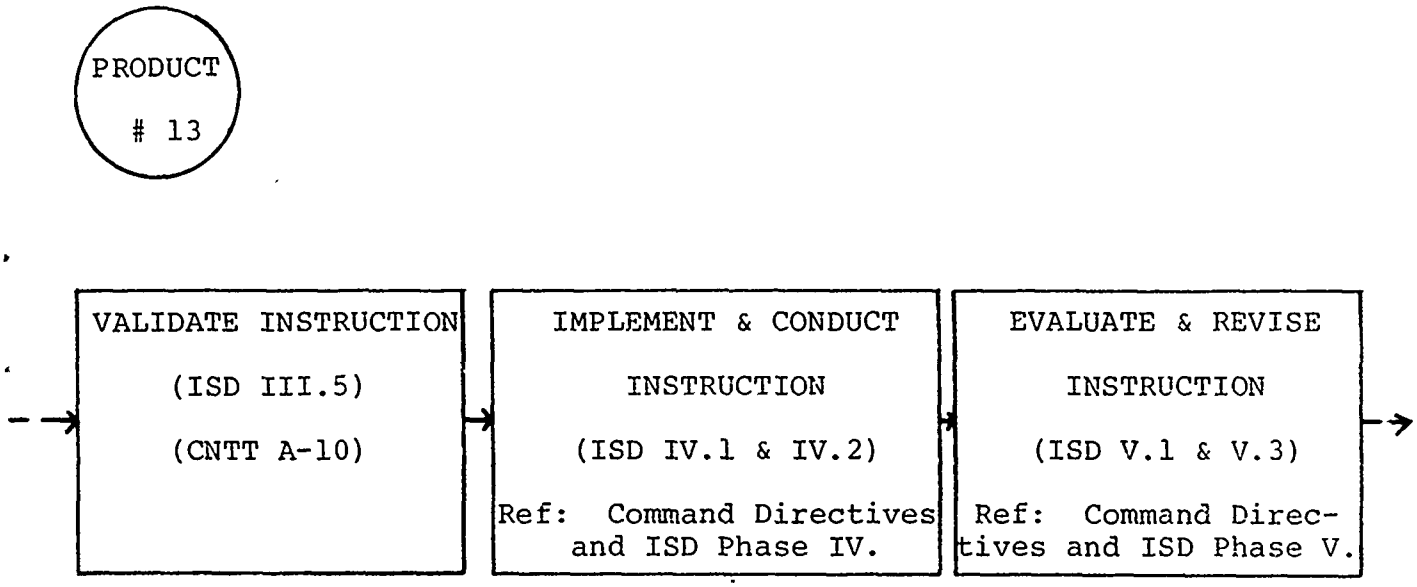
4. Type of training program:

Course J-201-0827, Communications On-Line Systems Operator (Basic)

5. Program objective for which service or services is required:

Required to support theory portion of course

// signature of director //



SAMPLE VALIDATION *

*Refer to page i-5 for the complete thirteen product Course Development Flow Chart.

PROFESSOR ED SPECS COMMENTS:

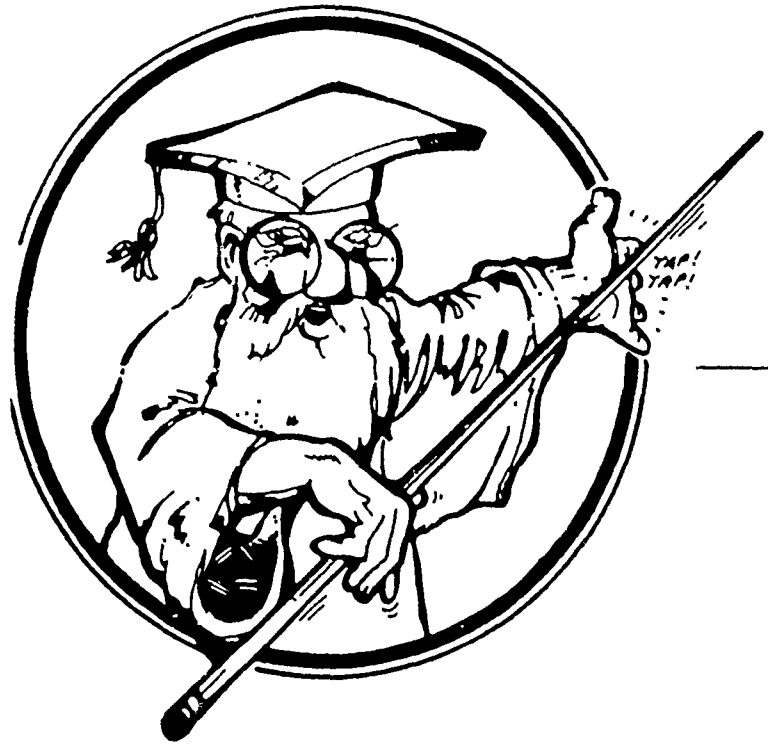
Validation is nothing more than piloting your course to see if it teaches what it was designed to teach. The course is revised as many times as necessary until it does teach what it was designed to teach.

Still, there are some general rules on validation.

-At least 30 students must be in the validation sample. (CNTT A-10, p. 388). (Sometimes this will require numerous class convenings).

-A standard for acceptable validation must be established. Usually this standard is a 90/90 criteria. A 90/90 criteria means that 90% of the students will meet 90% of the objectives without retraining and retesting.

In the following validation sample 91% of the students (all except ELTERS) met the standards of 90% or more of the objectives. If this trend or a better one continues until 30 or more students have become part of the validation sample, the course will be considered validated.



PROGRESS RECORD SHEET
COURSE NO. J-201-0827

CLASS 6-76

NAME	RATE	OBJECTIVE NUMBER 1.1.1	1.2.1	1.3.1	1.3.2	1.4.1	2.1.1	2.1.2	2.2.1	2.3.1	2.4.1	3.1.1	3.1.2
ABLE, R. L.	RM3	S	S	S	S	S	S	S	S	S	S	S	S
BROWN, D. L.	RM2	S	S	S	S	S	S	S	S	S	S	S	S
CARLETON, C. C.	RM3	S	S	S	S	S	U S	S	S	S	S	S	S
DOWNS, M. O.	RMSN	S	S	S	S	S	S	S	S	S	S	S	S
ELTERS, B. J.	RM3	S	S	S	S	S	S	U S	U S	S	S	U S	S
FOX, H. C.	RMSN	S	S	S	S	S	S	S	S	S	S	S	S
HERALD, R. C.	RM2	S	S	S	S	S	S	S	S	S	S	S	S
JONES, H. S.	RM3	S	S	S	S	S	S	S	S	S	S	S	S
MONTY, S. T.	RM3	S	S	S	S	S	S	S	S	S	S	S	S
RUSSEL, R. R.	RMSN	S	S	S	S	S	S	S	S	S	S	S	S
SMITH, J. D.	RM2	S	S	S	S	S	S	S	S	S	S	S	S
AVERAGE PERCENT		100	100	100	100	100	91 100	91 100	91 100	100	100	91 100	100

S - Satisfactory
U - Unsatisfactory
(Note - it is recommended that red pen or pencil be used for "U" marks.

-score on 1st test of objective
-score on retest of objective if applicable

6534P8

PROFESSOR ED SPECS COMMENTS:

Only enabling objective nos. In this sample the terminal objectives were not tested separately, but rather, were considered to have been tested when all the supporting enabling objectives had been tested.

*Red flag - note objective 3.2.1. Over 10% of the students failed the first testing of this objective. This indicates a weakness in the instruction and corrective measures should be considered.

FINISH - For the developer, completion of validation has seemed like it would never happen. But, it does. The developer's job is complete with validation. Relax and congratulate yourself on a job well done.

PROGRESS RECORD SHEET
COURSE NO. J-201-0827

CLASS 7-76 (Cont'd)

On 3.2.1, Elters passed a retest after seeing the academic review board.

NAME	RATE	OBJECTIVE NUMBER 3.2.1	3.3.1	3.3.2	4.1.1	4.1.2	4.2.1	4.2.2	4.3.1	4.3.2	AVERAGE PERCENT
ABLE, R. L.	RM3	S	S	S	S	S	S	S	S	S	100
BROWN, D. L.	RM2	S	S	S	S	S	S	U S	S	S	95 100
CARLETON, C. C.	RM3	S	S	S	S	S	S	S	S	S	100
DOWNS, M. O.	RMSN	S	S	S	S	S	S	S	S	S	100
ELTERS, B. J.	RM3	U U	S	S	U S	S	S	S	S	S	100
FOX, H. C.	RMSN	S	S	S	S	S	S	S	S	S	100
HERALD, R. C.	RM2	S	S	S	S	S	S	S	S	S	100
JONES, H. S.	RM3	S	S	S	S	S	S	S	S	S	100
MONTY, S. T.	RM3	S	S	S	S	S	S	S	S	S	100
RUSSEL, R. R.	RMSN	U S	U S	S	S	S	S	S	S	S	90 100
SMITH, J. D.	RM2	S	S	S	S	S	S	S	S	S	100
AVERAGE PERCENT		82 91	91 100	100	91 100	100	100	91 100	100	100	

S - Satisfactory
U - Unsatisfactory
(Note - recommend using red pen for unsat scores)

Score on 1st test of objective

Score on 2nd test of objective, if applicable

1920P8